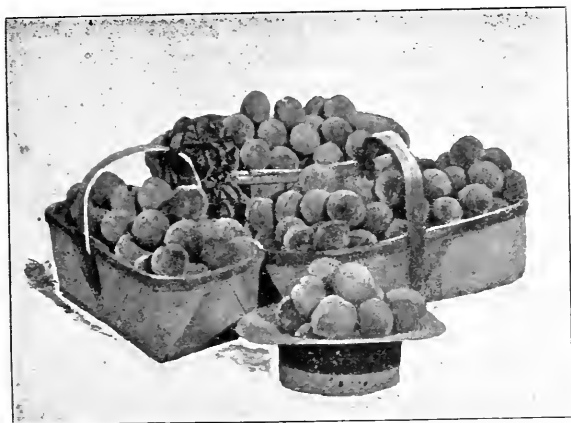


WEST VIRGINIA
AGRICULTURAL EXPERIMENT STATION,
MORGANTOWN, W. VA.

BULLETIN 82.

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Peach Growing in West Virginia



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BY K. C. DAVIS.

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[The Bulletins and Reports of this Station will be mailed free to any citizen of West Virginia upon written application. Address, Director of Agricultural Experiment Station, Morgantown, W. Va.]

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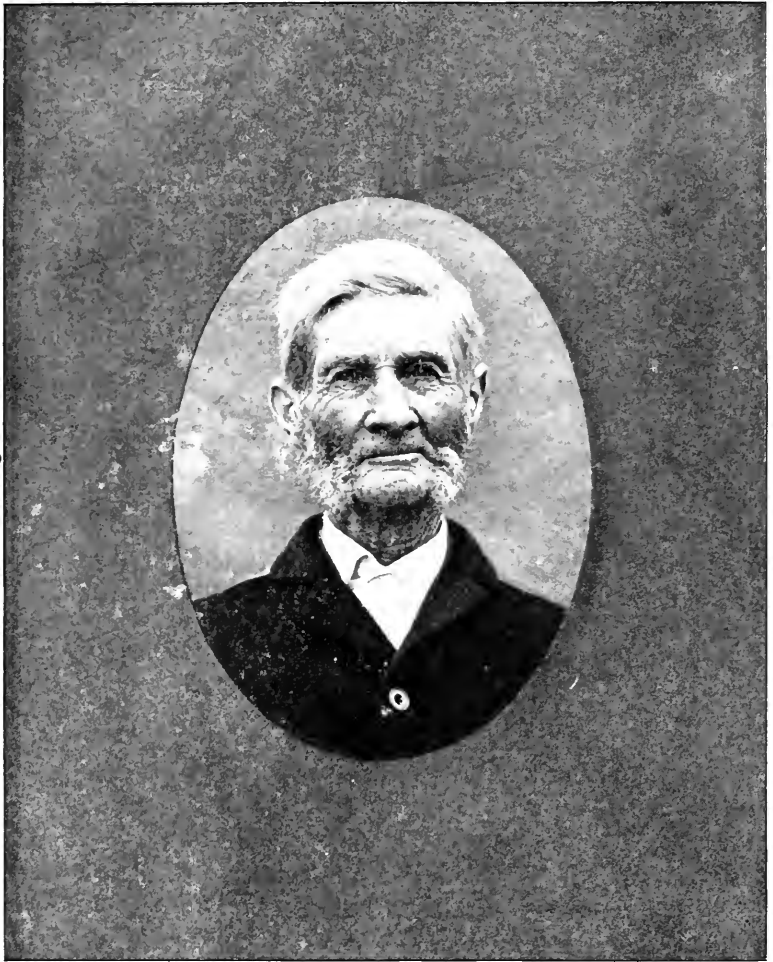
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MR. W. S. MILLER, JUST BEFORE HIS LAST ILLNESS.

Photo by Rumsey.

BASIS OF OUR PEACH INDUSTRY.

West Virginia is very rapidly pushing to the front rank as a peach producing State. Some of the shipping statistics given in this bulletin very strongly support this statement, although they fall far short of telling the magnitude of the industry. There are several reasons why peach growing has become of such vast importance in the "Mountain State." Some of the influencing factors working to put the peach on a commercial basis may be enumerated:

First, the vast areas where certain soils predominate, on which the peach thrives better than any where else in the world and better than anything else of equal value yet tried.

Second, the favorable climates found in the several parts of the State, combined with most suitable elevations.

Third, the rapid development of the State in other lines,—such as mining, lumbering, paper making, tanning, oil and gas production, glass, tile, and brick manufacture, etc., thus building up the very finest local, special markets for choice fresh fruits right within our own borders. Such markets as Grafton, Fairmont, Mannington, Clarksburg, Morgantown and a hundred others are of the type of markets here mentioned. Many of them have but recently become very important in this regard, and prices of fruit usually range higher than in the large cities.

Fourth, in this connection should also be considered the numerous local markets just across our line in Pennsylvania, Maryland, Virginia, Kentucky and Ohio, some of which are devoted to mining and manufacturing industries. We are shipping our fresh peaches to numerous fine local markets not far distant.

Fifth, a factor in building up the commercial side of the industry is the improved means of transportation: (1) greater extent of railway lines; (2) greater number of express trains making all local stops; (3) improved facilities for transporting car-load lots in iced cars to the general markets.

Sixth, West Virginia is particularly well situated geographically to reach the large markets with fresh fruit. The time by fast freight from various parts of the State will average: to New York City 24 hours, to Philadelphia 15 to 18 hours, to Baltimore and Washington about 12 hours, to Pittsburg 10 to 20 hours. Louisville, Cincinnati, Columbus and Buffalo are not too far distant. One peach company of the State has even sent fresh peaches to London, England, with very gratifying results. We are eight days nearer that great world market than are the peach growers of California and two or three days nearer than Michigan. California peaches picked eight days before ours start have an inferior flavor and cannot compete with the West Virginia product in the London market.

Each season the bulk of the Georgia crop is gone when West Virginia shipments to the cities are at their height; and the Connecticut product is often too late to offer us serious competition.

Seventh, the pluck and energy of the men who are now chiefly engaged in the peach orchard business in the State is one of the most important factors to be considered in the successful pursuit of the peach industry. The splendid success of a few such men is leading numerous others into the business. They have made a thorough study of the soil and climatic requirements of the peach and their knowledge and application of the best cultural methods is not only making their own undertakings a financial success but is doing much to cause others to follow their example.

HISTORICAL.

In the court house of Berkeley county is recorded in deed

book No. 3 a record of a lease which includes a stipulation for a peach orchard. As this is probably the earliest record of an orchard within the present borders of the State, the main points of the lease are here given:

The lease was made by George Washington, of Mt. Vernon, to Wm. Bartlett, and granted 125 acres "in the barens of Bullskin," then a part of Berkeley county, near the present Knabletown postoffice. The grantee was "to have and to hold" from date "for and during the lives of the said Wm. Bartlett, Mary his wife and Frederick their son, and the life of the longest liver of them." There were several considerations: (a) An annual rent of six pounds in Virginia currency payable at Mount Vernon, Christmas day. (b) An area of native woods to remain untouched. (c) "A dwelling 16 feetsquare of hewn logs, and a barn at least 40x20 feet, a well, and other buildings all to be at Bartlett's expense. (d) Two 5-acre tracts of "English grass." (e) And also "that within seven years an orchard of one hundred winter apple trees at forty feet distant every way from each other, and one hundred peach trees shall be planted on some convenient part of the said demised land and the same to be kept always during the continuance of said term well pruned, fenced in and secured from horses, cattle and other creatures that may hurt them, and if any of the said trees shall die, decay or be destroyed that others of the same kind shall be planted in their place, and the entire number thereof kept up during the said term." The lease was executed in presence of five witnesses acting as a county court for Berkeley county, March 18, 1774.

Many a farmer in the State has since planted a home orchard of a hundred peach trees, and thousands can and will profit by their example.

FATHER OF COMMERCIAL ORCHARDING.

If any one deserves the distinction of being called the father of commercial orcharding in West Virginia that man is the

late W. S. Miller who lived for over eighty-two years near Gerardstown, Berkeley county, up to the time of his death Dec. 31, 1901. The frontispiece of this bulletin shows his likeness in October, 1901. On the farm where he died he planted his first orchard of apples, peaches and plums in 1851. This orchard contained but sixteen acres, an area which must have seemed, to the people of that time, entirely too large to be used for such a purpose, but the area has been increased year by year. Upon the place over 4,000 apple trees have been planted and have grown to bearing age. Some 25,000 peach trees, besides many pear, plum, quince, and many other fruits are now bearing there. Figure 1 shows a young orchard on the Miller place.

When the Civil War began Mr. Miller had an abundance of nursery stock on hand which could not be sold, so as he had opportunity he put out many orchard trees. The close of the war found him with about 4,000 peach trees in full bearing. Martinsburg was the nearest market. His eight boys, as they grew up, took charge of the retailing and sold direct from wagons to consumers. The prices in those days were 75c. to \$1 per peck for peaches. The first sales in outside markets were made to a Baltimore party, who bought the peaches at \$6 per flour barrel. The boys hauled the peaches to market in a wagon box, where the Baltimore agent measured them out with a flour barrel and then poured them on the straw-covered floor of the box car. These were the primitive days of peach handling.

It may be said of the venerable orchardist, that he had a greater love for trees and a greater interest in the possibilities to be obtained by expert horticultural methods, than he had in the money to be gained from a large orchard. Indeed, he has made his farm an extensive experiment station. Every new variety of any kind of fruit which was mentioned with favor by a nurseryman was sure to find a place in his orchard. A promising variety was often given a quick trial by top grafting or budding on trees of bearing age. Thus this careful nurseryman tested the qualities of hundreds of varieties of new fruits in

periods of one to three years. Even to his death, he was seeking for new varieties. Many which he collected are now only started upon his place, while thousands of others have been carried to a successful test, and few, if any, plantations will compare with this in the number of varieties of apples, peaches, plums, pears, grapes, quinces and all kinds of small fruits.

Mr. Miller is survived by Mrs. Miller and eleven children. Of this large family, six sons and two daughters are actively and successfully engaged in fruit growing, and their commercial interests in the peach business are far more extensive than those of any other family in America. Chas. H. Miller is orchardist on the home place and is manager of plantations for other owners in the eastern part of the State. D. G. has about 100 acres in apples, peaches and berries. L. P. and two brothers, G. P. and H. W., are running an orchard of 70,000 peach trees at Levels, Hampshire county, under the name of L. P. Miller & Bros. The two latter are controlling stockholders in the Alleghany Orchard Company, which is perhaps one of the largest fruit companies engaged in peach growing in the world. They have in bearing age at present 110,000 peach and plum trees at Paw Paw, 30,000 peach at Spring Gap, 22,000 peach at Romney, 18,000 peach at Keyser. The company is contemplating extensive plantations of peach trees next fall at Romney and Paw Paw. John M. Miller has had marked success in apple growing. His orchards on the Apple Pie Ridge amount to 400 acres in all, and are among the most productive apple orchards to be found anywhere. He also has 23,000 peach trees in bearing, as another side to his fruit interest. The above are all making more extensive plantations and will double their interests. Two daughters Misses Nannie and Bessie are owners and managers of the large "Sun Rise" peach orchard near the home place.

Much could be written in regard to the great horticultural value which Mr. W. S. Miller has been to West Virginia and the adjoining States. His name will ever live in the minds and hearts of those whom he has helped so much. He is, and

ever will be, regarded as the most prominent and foremost of orchardists in the history of West Virginia. Hundreds of men, from far and near, who have contemplated planting orchards, have visited his place, and he has taken great delight in showing them the merits or demerits of various varieties, knowing them invariably at sight, without stopping to look at labels. He never kept in his nursery any varieties which he would not use in his own orchard. Many a man has received his inspiration and indeed his first stock of grafts, twigs, plants, etc., entirely from Mr. Miller, who seemed only too glad to have the opportunity of helping others. The present immense fruit industry in the eastern panhandle and adjacent states is a monument to his willingness to help others and to his great ability as an experimental orchardist. A correspondent in writing of Mr. Miller said, "He never assumed the role of a man of superior knowledge. His knowledge was possessed in the greatest humility, so that he gave to strangers the idea that instead of granting them a favor, he was receiving a favor from them in consulting him. Without his work or some other similar life there would be no successful orchards in our part of the country."

PEACH REGIONS.

The peach is very susceptible to spring frosts and very partial to those situations where its buds will not start during warm winter days to be killed by sudden freezes or frosts. For this reason it thrives best where it is under the moderating influence of large bodies of water.

In the northern and eastern states the regions noted for their evenness and mildness of winter temperatures are best for the peach. These are chiefly close to the great lakes and to the sea coast. Thus we find a great peach belt on the eastern shore of Lake Michigan where the prevailing winds from the water moderate the climate very much. Commercial orchards are extensive along lakes Erie and Ontario. Along the Atlantic seaboard, the most noted peach areas are in Connecticut and

southward to Maryland's eastern shore. From this middle seaboard region the peach thrives inland to the mountain regions of West Virginia. Extensive orchards are also found in Georgia and the northern part of Alabama, Eastern Texas, southern parts of Kansas, Missouri and Illinois; and the milder parts of California and Oregon.

The peach has its limits in latitude. Northward it does not pay well beyond 44 degrees and then only in the vicinity of water as in Michigan and Oregon. Southward it is limited by the attacks of a root disease which in our latitude is killed in winter by freezing.

IN WEST VIRGINIA.

The peach prefers those exposures where it is least likely to be influenced by the warmer days of February and early spring. On mountain and hill sides where it is somewhat sheltered from the warm rays of the sun it very seldom opens its buds before winter is entirely gone. It is evident that northern exposures are much better than southern. In certain sections where the prevailing western winds are very severe they are avoided by placing the orchard upon a slightly north eastern slope.

As the regions of each county are discussed in this bulletin very little more need be said concerning the state as a whole. The greatest peach belt of the state is in the mountainous region of Berkeley county extending westward through the counties of Morgan, Hampshire and Mineral and is gradually creeping into the adjoining counties of Hardy and Grant. The peach industry in Morgan and Hampshire counties is more extensive than in any other equally small area devoted to that fruit. The notes given under discussion of these counties give a better idea of the extent of the industry there. It is important to note that the largest orchards there are very young. The wonderful success of the peach in the Allegheny mountains has just come to be realized. The peach growers of America have not before believed that it would be safe to plant peach orchards

in the mountain districts. The reasons for the success here have already been outlined.

Peaches are grown successfully in every county in the state and in all of them are now being set more abundantly. The maps in this bulletin show the best regions for each county.

SOILS.

While the peach is partial to particular kinds of soil, yet there are a number of soils in the state on which it thrives very well.

DEVONIAN SHALES. In the Allegheny peach belt the soils most frequently used are those which have been formed by the breaking down of the Devonian shales and are known as the Romney and Hancock shales. The former is often red and has an abundance of iron in it which doubtless adds much to the color and flavor of the fruit grown there. The "Hancock" shales are of a light color, often yellowish, and their soils are considered very fine for peach growing. Both of these types of soil predominate in Morgan and Hampshire counties and southward.

CHERT. On the Knobley mountains in Mineral county chert soil is found in high altitudes. This formation, known by geologists as Lewistown or Heldeberg limestone, extends through Grant county into Pendleton. The "soil" is illustrated in figure 2, which shows that the surface is a perfect rock "ballast"; no fine soil is found on the surface. The rock may be described as a flinty limestone which gradually decomposes when exposed to the atmosphere and action of the plow. There the peach roots grow very deep and are nourished by the richest of sub-soils. Fruit from these Knobley orchards is the most luscious and brings the very highest of prices—\$3 per carrier of three pecks. On the mountain sides where this formation prevails the land does not wash away at times of heavy rains. The water penetrates to the roots immediately and the surface is never too wet to plow.

SANDY SOILS. In different parts of the State many varieties

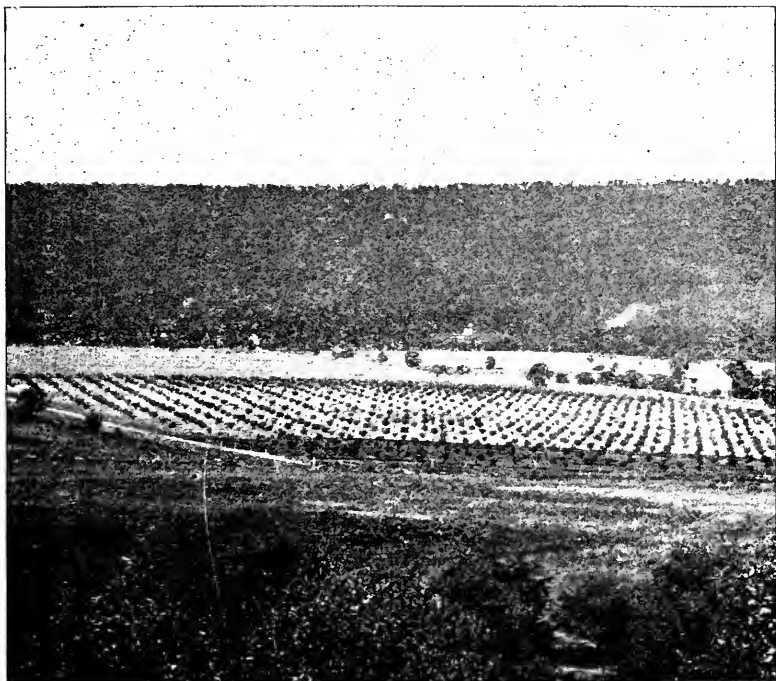


FIG. 1. PEACH AND APPLE ORCHARD, BERKELEY CO.



FIG 2. CHERT ROCK BEST PEACH "SOIL,"

of sandy soil are found and used for successful peach growing. Sandy formations containing an abundance of black loam are especially good. Such are often found on "second bottom" along the larger rivers where good air drainage is afforded. Good sandy soils are also found on the narrow plateaus parallel with certain mountain ranges where the best soil from the higher levels has been deposited. On these, peach orchards are very successful at an altitude of 800 to 1700 feet above tide.

LIMESTONE. Black soils of limestone origin when found at suitable altitudes above the surrounding country are very good for peaches. Some of the best small orchards in the State are on such soil.

VIRGIN SOIL. In planting the peach on a commercial scale it is best to use those soils which have just been cleared of the native timber and brush. Lands which have long been in use for agricultural purposes are not so prolific in the production of peaches as the virgin soil cleared of woods.

SOILS NOT SUITABLE. Peaches will grow on heavy clay land and on the dark shale or slate soil, but growers have been much less successful with the peach on such soils. In the slaty formations drouths are apt to be especially detrimental, borers are said to be worse, and trees are short-lived. Trees suffer most in the heavy clay land during wet weather. The apple is much better suited to this type of soils.

FERTILIZERS.

In West Virginia at present a number of commercial peach growers are using chemical fertilizers in their orchards. In many instances potash makes up a large proportion of the application, while in others phosphoric acid, with a little nitrate is used. The tree needs a fertilizer rather strong in nitrogen during the first years of its growing period. The rule among peach growers has been to apply potash rather heavily to bring about a fruiting condition of the orchard. On some soils already weak in potash, this gives the desired results. The Allegheny Orchard Co. in co-operation with this Experiment

Station has been making a large number of tests to determine not only the best combinations of fertilizers to be used on peaches grown on Romney shales but also to determine the amount most profitable for use. These experiments will show orchardists what to use on that kind of soil so abundant in the Allegheney mountains for the various objects desired as: growth of wood, retention of foliage and consequent ripening of wood, color, size, and amount of fruit, date of maturity of fruit.

These experiments are not yet completed and the full results will not be published until later. Some of the lessons already learned are now being applied by growers in that section:

1. A complete commercial fertilizer is good if made up of the three following substances within the range of weights given.

Dissolved Bone - 60 to 80 ozs.

Muriate of Potash 20 to 30 ozs.

Nitrate of Soda - 20 to 30 ozs.

The several combinations made up between these limits were applied at the rate of four or five pounds per tree for the first five years of the growth of the orchard. The excellent results were rather uniform in all instances. A tree of this lot is shown in figure 4 in comparison with one not fertilized, photographed the fourth summer. All trees treated with the above application hold their leaves and fruit later than check or unfertilized trees. 2. All applications containing one or two pounds of muriate of potash, but omitting either the nitrate or the phosphate (dissolved bone), did very little good or were even detrimental in some instances. More than two pounds of potash per tree even killed the trees in several instances. 3. Light applications of potash with some acid phosphate, in form of South Carolina rock or otherwise, produced the best colored fruit. 4. Results indicate that the dates of ripening can be controlled to a limited extent by certain applications now being tested. 5. When applied alone, bone meal gives better growth than dissolved bone. 6. Thomas Slag, while difficult to obtain, gives no better results than South Carolina rock.

The Station is now trying other experiments along this line with growers in other parts of the state to determine the best fertilizers for other types of peach soil.

CATCH CROPS AND CULTURE.

Peach orchards in the mountains are frequently located on slopes so steep that washing rains are very detrimental. In such cases the surface ground is usually held in place by the use of cover crops or catch crops. It is perhaps a too common practice in this State to use for this purpose such covers as clover, timothy and blue grass, which do not allow of sufficient cultivation of the orchards. In many of the larger orchards the surface is plowed every spring with common turning plows running across the slopes. Clean culture with double shovel cultivators, spring-tooth and other harrows is then kept up until nearly midsummer or peach-harvest time. Then weeds are allowed to cover the ground or cow peas are sown. This cover keeps the ground mellow and in good physical condition; it prevents much soil erosion; it aids evaporation and prevents too rapid growth of trees in late summer; the roots of the cover crop leave the soil in better chemical condition.

In the fall, the cow peas or weeds are easily plowed under or better, reduced with a spring-tooth or disk harrow and rye is sown. There are many advantages of a winter cover crop, as of rye. There is little bad washing of the soil by late fall and early spring rains. The soil is kept at a more uniform temperature and the peach trees stand the winter weather. Soil which has had a winter cover of this kind is in better condition for early spring plowing than bare ground.

The winter and summer cover crops not only serve the purposes above mentioned but they also serve as green manures when plowed in. Some growers have found that although the green manures are inclined to sour the soil they can easily keep them "sweet" or neutral by liberal applications of lime. These two materials—green manure and lime—when both present in

the soil produce a chemical action there which liberates much plant food.

Figure 7 shows a two-year-old peach orchard where clean culture has been practiced with turning plow and harrow. Figure 3 shows cow peas in a young peach orchard late in August. Figure 8 shows an orchard cultivated until July 1st with a spring-tooth harrow.

This Station and several orchardists are trying a number of other cover or catch crops to help solve the peculiar problems of the orchards of the mountainous districts. Some of these as Vetch and Soy beans are very promising.

SETTING OUT ORCHARDS.

It is almost universal practice in this State to plant in orchards trees which have been budded in August and have grown from the buds the whole of the following season. The peach stocks in general use are grown from so-called native seeds by nurseries in our own State, or others in adjoining states of about the same latitude. A few orchardists deem it advisable to get southern-grown trees and claim that such trees are stronger because of the longer season of growth at the south. Trees grown in our latitude or farther north are more likely to withstand winter freezes.

Too much attention cannot be given to the proper preparation of the soil before the trees are set. After the timber and brush have been cleared the ground is as deeply and as thoroughly plowed as possible. The rows are then marked one way by deep furrows as in figure 9, or a special marker is used. Holes are then dug in the furrows, with plenty of loose dirt in the bottom. The distance preferred is twenty feet each way.

Setting the trees may be done in the fall but spring is preferred if the orchardist is not too busy with other work. Planting the trees requires the most careful attention.

Root pruning is not practiced to any great extent. The broken roots and bruised places should be cut away. The top is headed low by cutting the main shoot back to a few buds and

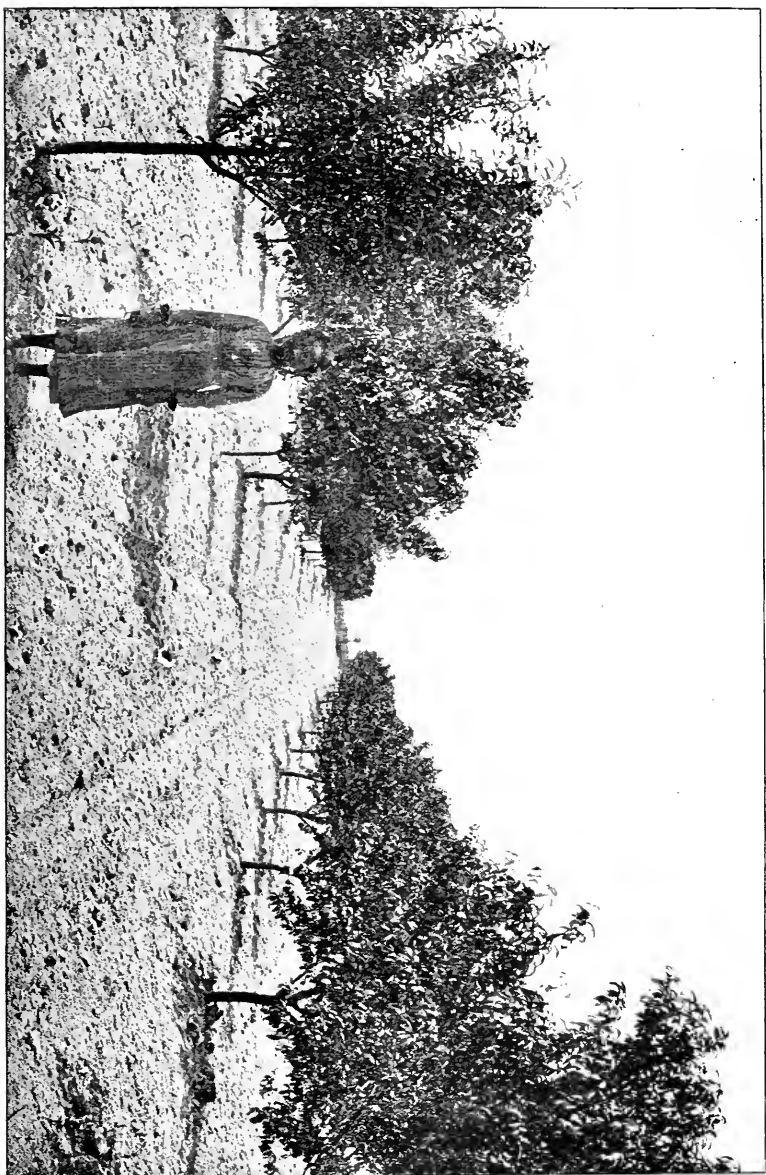


FIG. 7. CLEAN CULTURE HAS BEEN THE PRACTICE HERE.



FIG. 8. FRUIT HERE WAS THINNED WELL.

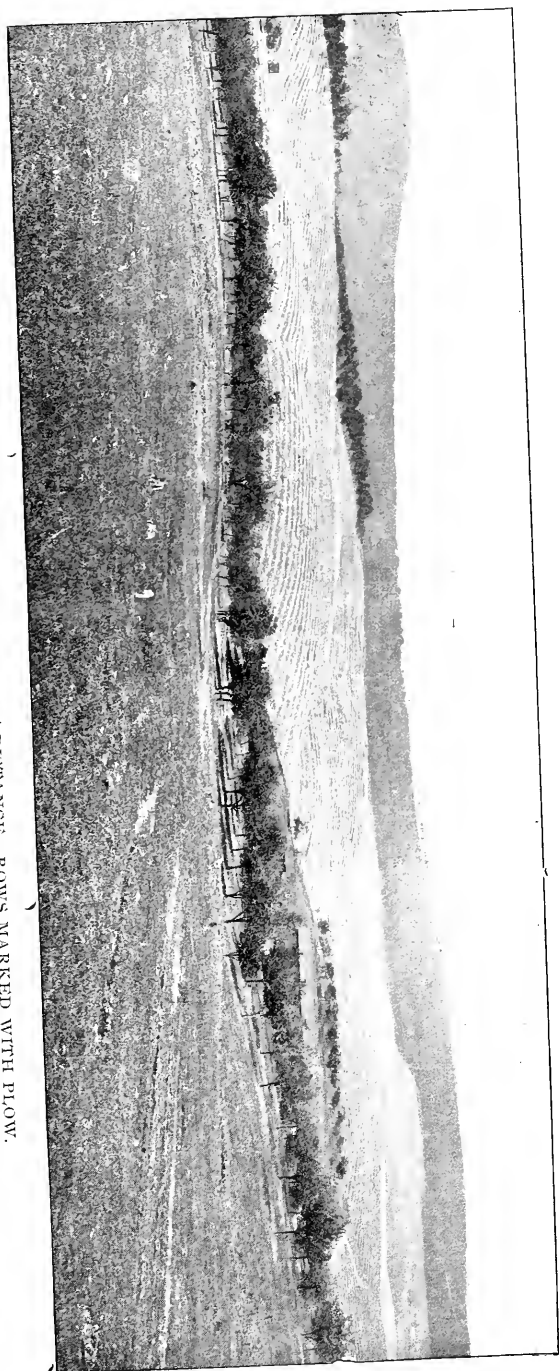


FIG. 9. NEWLY SET PEACH ORCHARD IN THE DISTANCE. ROWS MARKED WITH PLOW.

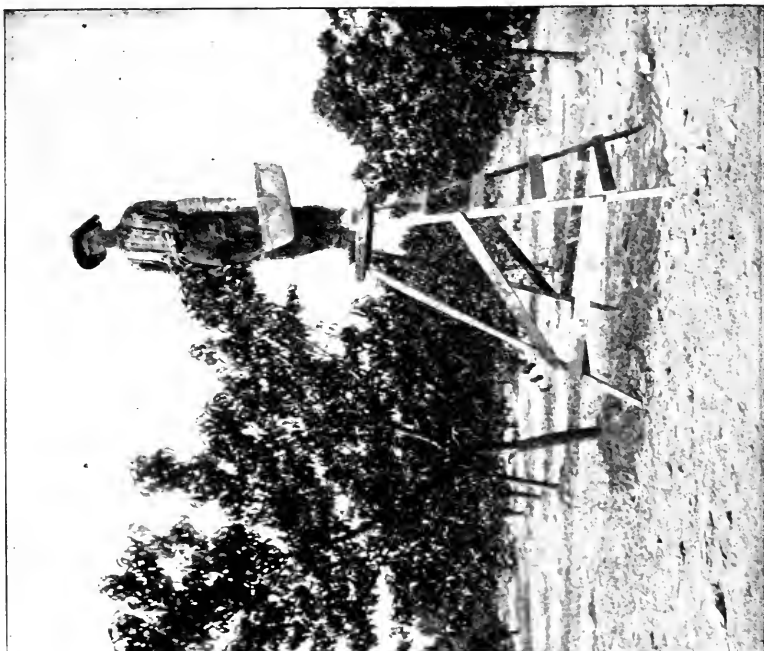


FIG. 11. PICKING STAND FOR LARGE, OLD TREES.



FIG. 10. A WELL TRAINED, THREE YEAR OLD PEACH TREE.

requiring the new growth to start out within a foot or two of the ground.

Annual pruning in early spring not only keeps the tree more rigid and able to carry its load of fruit but it also keeps the tree within picking distance of the ground for several years. Figure 10 shows the low-headed type of tree. Figure 11 shows the branches starting thirty to forty inches from the ground.

In very large orchards, as that of the Allegheny Orchard Company at Paw Paw, W. Va., it is very important to arrange the blocks of varieties in such a way as to facilitate picking. Those varieties ripening in succession should be arranged in succession across the orchard. This will avoid the necessity of moving large bodies of pickers and their supplies back and forth over the orchard.

THINNING THE FRUIT.

As thinning fruit is very generally practiced by the best growers very little need be said concerning the matter.

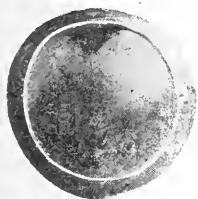


Fig. 12.

Figure 12 shows the comparative sizes of average sized peaches taken from thinned and unthinned trees of the same variety. Six inches is a good distance to which to thin the fruit. Figure 13 shows a heavy load of small peaches on a tree not thinned; while figure 8 shows trees well loaded with first-grade fruit because of the thinning.

When removing the small fruit from the trees it is best to leave the finest specimens and take off those "stung" by curculio and any which are otherwise inferior. The fruit on well thinned trees is less likely to be attacked by the brown rot fungus. The disease spreads more rapidly when the fruit is crowded on the limbs. The effects of this fungus are shown in figures 15 and 16 on Japan plum and peach. [For a discussion of this disease see bulletin 66 of this Station.]

COMBATting ENEMIES.

In the valley regions peaches are often subject to brown rot disease. See figures 15 and 16. But the high altitudes of the mountain ranges are better suited to the peach in this respect. However, the best growers find it advisable to use the most approved means for preventing this and other diseases.

In bulletin 66 of this Experiment Station are found descriptions of several diseases of the peach, viz., black spot of the fruit, brown rot, leaf curl, yellows; and treatments for these are given in that publication. As prevention is worth very much and attempts to cure are worth nothing with the two most prevalent diseases in our peach orchards, it is now becoming a general practice to spray the orchards with copper sulfate (bluestone) in early spring. Two or three pounds of the bluestone are dissolved in a barrel (45 gallons) of water, and the trees thoroughly sprayed once, or better twice, before the blossoms begin to show. After the petals have fallen Bordeaux mixture is used say three times, at intervals of ten days or two weeks. The Price formula quoted on page 213, bulletin 66, may be slightly modified by using four pounds of bluestone to five of lime and forty-five gallons of water.

By a judicious selection of varieties the heaviest losses from brown rot may be avoided. Alexander and some of the other very early varieties are especially subject to the rot in wet seasons.

Peach mildew and black spot are usually worse on the white-fleshed varieties. Mountain orchards are not troubled with the disease, the fruit there attaining the highest color, as well as best form and flavor. The clear fresh air free from fogs carries few disease germs as compared with the atmosphere of the Atlantic plains. Nursery men find that seed for stocks and twigs for budding if obtained from the orchards at high altitude are less susceptible to disease.

INSECT PESTS.

PEACH TREE BORER. This insect does more injury through-

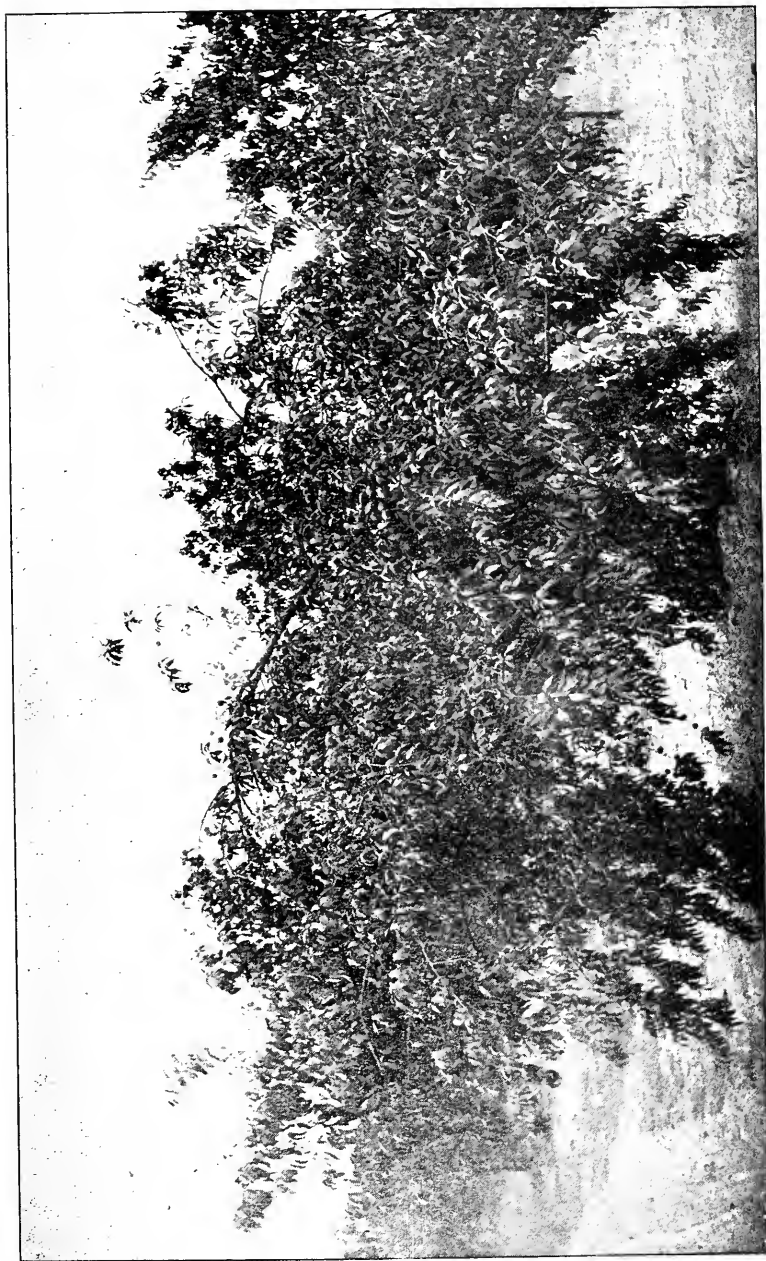


FIG. 13. FRUIT NOT THINNED; TREE OVERLOADED.



Fig. 14. Wagon used by Allegheny Orchard Co., Holding 100 Five-eighths Baskets.



Fig. 15. Brown Rot on Plum.

Fig. 16. Same on Peach.

out the state than all other enemies of the peach. The little borer or grub begins eating under the bark of the trunk in mid-summer and becomes nearly three-fourths of an inch long by fall. A gummy exudation indicates the presence of the borer. The watchful grower will also find "saw dust" borings escaping in some places near the surface of the ground.

Two plans of combatting the pests are in general use. The tree trunks are washed in spring or early summer with a preparation of lime and water which may contain some disagreeable substances as cow dung, soft soap, etc. This wash, if renewed and kept on the trunks until after hatching time of the eggs, will protect the orchard from a large percent of the borers.

The second and more common remedy is to "worm" or grub in the trees for borers in September or October and again in April or May. This is done by digging the dirt from the trunks a few inches below the ground level. After a few days dig with a knife and wire for the borers under the bark wherever the gum or borings may be seen. Grafting wax may be rubbed over these wounds and the dirt thrown back and heaped up around the tree.

CURCULIO. This insect has not yet become a serious pest in the mountain orchards. At the lower altitudes it often makes serious attacks on the young fruit, one to four weeks after the blossoms fall. The little beetle bites crescent-shaped openings in the skin and then deposits her eggs in these places. The young, when hatched, eat inside and produce the "wormy" effects in the fruit. Spraying cannot kill the young. The beetles may be poisoned by spraying the trees before and after blossoming with five or six ounces of Paris Green in a barrel of Bordeaux mixture or of water. Thus the beetles may be partly destroyed before depositing their eggs. A more successful method is to catch the beetles in a sheet or hopper of cloth under the trees, by jarring the trees with a wooden mallet early in the morning every day or two when the pest is attacking the young fruit.

FRUIT BARK BEETLE. In the northern panhandle and some other parts of the state this insect does some damage especially to old and devitalized trees. The larvæ burrow in the soft wood or inner bark and may finally kill the limbs. The beetles emerge through little round openings from which they get the name "pin-hole" borers.

The best remedy is to keep the orchard in a healthy vigorous condition to enable the trees to resist the attacks of the insect. Badly infested trees should be cut and burned to prevent further spread of the insect.

SAN JOSE SCALE. In Jefferson and Berkeley counties and restricted areas in several other counties of the State, the San Jose Scale insect is at present doing considerable damage. The working of this pest as well as remedies for its control are discussed in bulletin 78 of this Station.

VARIETIES.

Too much attention cannot be given to the proper selection of varieties. The number of varieties to be used will depend largely upon the method of marketing the fruit. If shipments are to be made in iced cars, care should be taken to plant enough of one variety, or of two ripening at the same time, to fill one or more cars at a time, as freight rates are much less than express rates. If the fruit is all to be hauled to near-by local markets a few hundred trees of a kind may be enough, and possibly ten or more varieties will be wanted. As the earlier varieties are subject to brown rot disease, it is considered unwise to plant any great number which ripen before Southern Early, about August 10 to 20.

Hon. H. W. Miller, of Paw Paw, has given much attention to varieties in the State and recommends the following list for commercial planting. The groups are given in order of ripening. Those marked with a star (*) are the most prolific bearers.

MILLER'S LIST.

- 1st. Southern Early*.
- 2nd. Mountain Rose*, Champion.
- 3rd. Oldmixon Free*, Stump-the-World.
- 4th. Reeves Favorite, Captain Ede.
- 5th. Elberta*.
- 6th. Crawford Late, Fox Seedling*.
- 7th. Smock, Ford's Late*, Pickett's Late.
- 8th. Bonanza*, Heath Cling, Leavy's Late Cling.
- 9th. Salway*.
- 10th. Bilyeu.

In 1901 the ripening dates for the above ranged from August 8 to October 19. Although two hard frosts came before Bilyeu fruit was all mature the trees held the fruit and brought it to a marketable condition. It is advisable to give such a late variety the most favorable situation possible.

Other varieties which have proven commercial qualities in the mountain peach belt are Carman and Waddell, which are both good freestone peaches ripening about the first of August. None as early as these are better. The yellow St. John, ripening with Mountain Rose and Champion, is an old favorite and has not yet been excelled by any of the newer varieties.

Champion is an ideal peach in color, flavor and quality. Elberta is a great success. It not only stands a prolonged drouth but does not suffer during a wet season. Fox's Seedling and Ford's Late are the standard white varieties in general use for September markets.

NEW VARIETIES.

Tests of new varieties are being made at a number of points in the State. The owners of these trial orchards have given this Station and fruit growers all possible advantage of the tests which they are making with much forethought and expense. The largest test orchards in the State are owned by the following:

Fred E. Brooks, French Creek, Upshur county; Wm. Meade, Stonecoal, Wayne county; C. S. Scott, Sink's Grove, Monroe

county; W. S. Miller estate, Gerrardstown, Berkeley county; Allegheny Orchard Co., Paw Paw, Morgan county.

Four very early old varieties and fifteen new ones tested at Paw Paw are described in the following table partly from notes published by Hon. H. W. Miller in the Ninth report of the State Horticultural Society:

VARIETY.	SIZE.	COLOR.	QUALITY	BEARING	SEASON.	REMARKS.
Sneed.....	medium	r & w	poor...	good...	July 1-10	Best very early peach
Triumph.....	medium	yellow	fair....	fair....	" 25	Good shipper.....
Greensboro.....	medium	r & w	good....	good....	" 25-30	Ripens unevenly.....
Japan Blood....	medium	red	fair....	fair....	July 25-30	Dwarf novelty only..
Carman.....	large....	white..	good....	good....	Aug. 1..	Good shipper.....
Waddell.....	large....	white..	good....	good....	" 1....	Very promising.....
Southern Early..	v. large	white..	v. good..	v. good..	" 10-20	Shape of Elberta.....
Bishop's Early..	large....	r & w	good....	v. good..	" 15-25	Recommend it.....
Kalsteads Early..	medium	r & w	good....	good....	" 20-25	.....
McIntosh.....	medium	.....	good....	good....	" 20-30	Very satisfactory.....
Connecticut.....	medium	yellow	good....	fair....	.....	Appearance poor.....
Pelle of Ga.....	large....	yellow	good....	v. good..	Aug 20-25	Much like Elberta.....
Peten de Venus..	large....	red....	v. good..	v. good..	Aug. 20.	Better than Oldmixon
Menshaw.....	large....	r & w	v. good..	light....	Aug 20-30	.....
Captain Ede.....	large....	yellow	v. good..	good....	Aug. 15..	Valuable for Mts.....
Edgemont.....	v. large	yellow	v. good..	v. good..	Sept. 10.	Origin, S. Mountain..
Lorentz.....	large....	yellow	good....	good....	Sept. 30.	Smock type.....
Dewey Cling....	large....	r & w	fair....	fair....	.....	Not replace Heath....
Flondike.....	large....	red....	v. good..	good....	Oct. 5....	Very promising.....

Emperor is a good Smock. Pry's Favorite, McCollister and Cobbler are much like the Lorentz but a little earlier, of the Crawford type.

For use in a home orchard Mr. R. L. Hutchinson, Ft. Pleasant, Mason county, recommends the following list of ten: Sneed, Triumph, Southern Early, Carman, Champion, Crosby, Elberta, Heath Cling, Oldmixon, Smock.

HARVEST TIME.

This is one of the busiest seasons in the peach orchard. At this time the grower realizes the advantage of low trained trees.

PICKING.

Each gang of pickers should be under a head man or boss, who has learned by careful study and experience how to judge when the fruit is ready to be handled. He must understand the appearance and "feel" of each variety at maturity. The men, and women, too, carry the large or small climax baskets shown

on the cover page of this bulletin. Small boys are often of use in carrying the filled baskets from the pickers in the field to the sorting stands. See figures 6 and 17. If packing houses are used, as in the larger orchards of Berkeley county, low wagons are necessary to carry the newly filled baskets to the houses. Each picker should be taught to judge what peaches to leave upon the trees and should be held responsible for the proper picking of his own row. A second picking to gather the few later-ripening fruits] is usually necessary even for varieties which ripen most evenly.

SORTING AND PACKING.

In most of our peach regions the sorting and packing is done after picking, at temporary stands erected at convenient places in the orchard. Such stands are shown in figures 17 and 18. Here the fruit, brought from the pickers, is all quickly graded by hand and packed in baskets as follows:

FIRST GRADE. The largest, most attractive fruits are packed in Georgia carriers or light crates, holding six small open baskets of one-half peck each. Fruit packed in this way brings the highest market price and more than repays the extra cost of the package.

SECOND GRADE. The smaller fruits of good shipping quality are placed in the Delaware baskets with sloping sides, holding five-eighth of a bushel. These are firmly pressed and closed with solid wooden covers. Views of these are seen in figures 17, 18 and 19.

THIRD GRADE. The softer fruits, which must reach the market first, are packed in the small (10-pound) climax baskets. These are now covered with an improved slatted top which holds the fruit in securely. Fruit of this grade is usually shipped in express cars in order that it may reach the consumer at the earliest possible moment.

Mr. W. I. Woods, of Berkeley county, uses a machine grader, which sorts the fruit into three or four sizes as desired. He

recommends this not only for peaches but also for prunes and plums. It consists of a long sloping trough with flat bottom. Round slats in the bottom, extending length-wise of the trough are revolved by foot power. Fruit is placed in the upper end of the trough and allowed to move toward the lower end, falling through into cloth conductors as an opening of proper size is reached. The operator removes all culls as the fruit passes by in front of him.

THE BY-PRODUCT.

The peach industry in the State is yet young, and extensive canneries and driers to use the small and over-ripe products have not been established. However a few small driers for this purpose are found in the eastern panhandle and a number of others are being planned. Until such establishments can use the by-products of the peach orchard they will continue to be used either as food for pigs or as fertilizers.

MARKETING WAGONS.

There are various types of wagons used for hauling the packed fruit to the railroad or to market. Fruit intended for local market is carried in a light spring wagon with cover to protect from hot sun or rain. S. L. Twigg, of Keyser, markets peaches in several towns many miles from his orchard, with such an outfit. In fact this is the most common type of wagon used in the State for carrying fruit to local markets.

For transporting large quantities of fruit to the railroad for shipment, either by express or freight, the Allegheny Orchard Company has adopted a special wagon with very long open frame. See figures 14 and 21. These wagons will carry from 90 to 110 of the five-eighths bushel baskets of the Delaware type, and about five loads will fill a car. The frame rests on

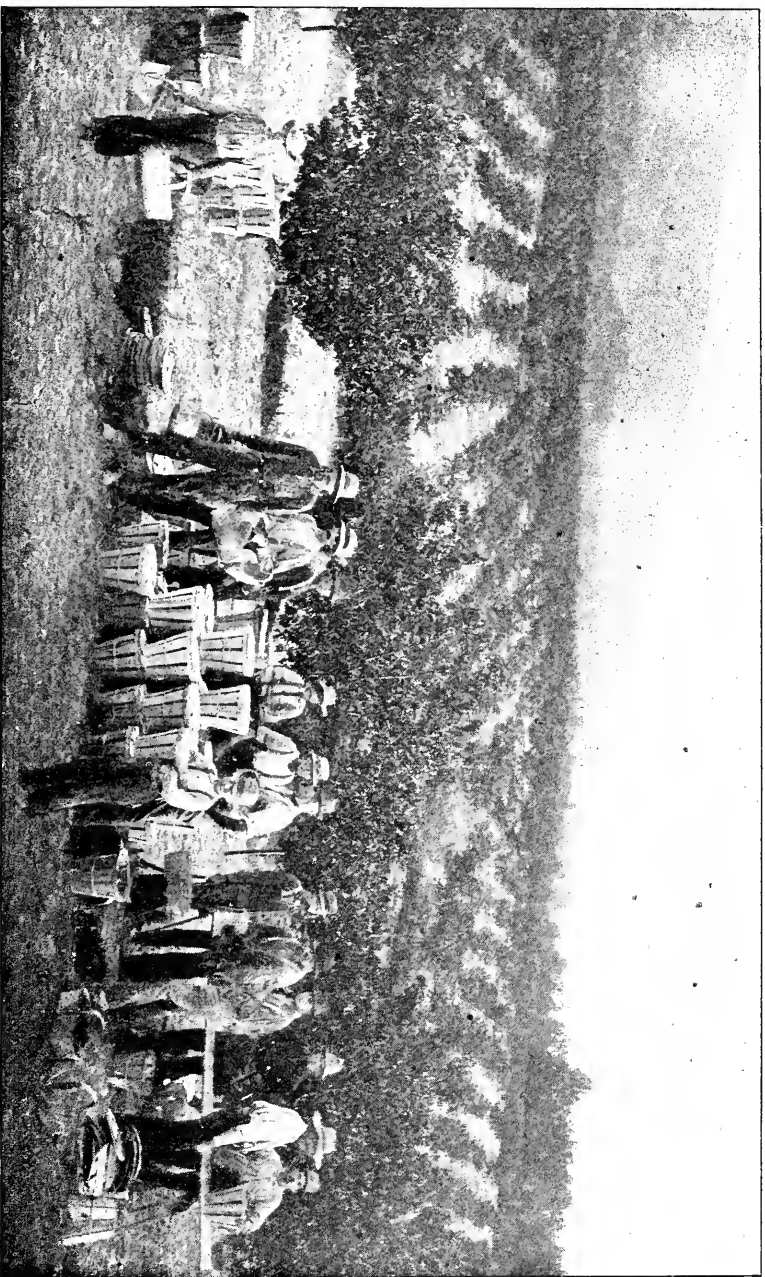


FIG. 17. PEACH ORCHARD THREE YEARS OLD, 30,000 TREES, ALLEGHENY ORCHARD CO., NEAR LITTLE CACAPON,

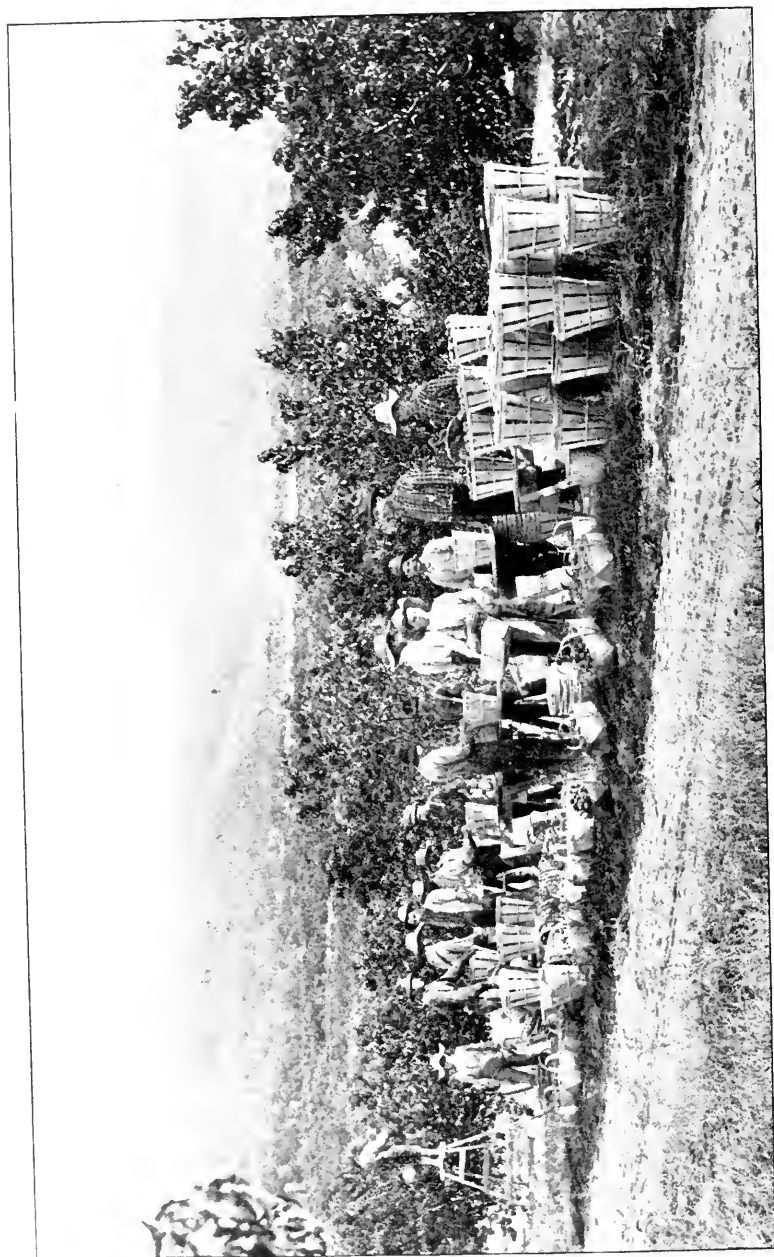


FIG. 18. SORTING AND PACKING PEACHES, ALLEGHENY ORCHARD CO., PAW PAW.

four heavy spiral springs to protect the fruit in movement over mountain roads.

CAR LOAD SHIPMENTS. There are a number of growers of the eastern panhandle shipping in car-load lots. And this method of transporting the fruit to the large markets is becoming more necessary as the young orchards are coming into bearing age. Not less than eight different styles of refrigerator cars are used for this purpose. All of them must be supplied with ice in a compartment above the ceiling. The first icing is done before the fruit is loaded. If much time elapses before the car is loaded, re-icing is necessary. The Allegheny Orchard Company stores 300 tons of ice at Little Cacapon for use in cars at that place and at Paw Paw, and procures the remainder at Cumberland and Martinsburg. The cost of icing a car is about seventeen or eighteen dollars, the re-icing, which is often needed, is less expensive. A car holds on an average about 20,000 pounds of fruit or from 560 to 600 of the five-eighths bushel baskets.

Freight rates on long hauls is less than one half the express rates. However the carload method can be used only to large general markets or central distributing points where the fruit is re-shipped to local markets. The above company maintains an office in Cumberland during the peach season. Here fruit is shipped as needed and re-shipped by express to the fine local markets of the mining and manufacturing regions of West Virginia, Pennsylvania and Western Maryland. These markets are used chiefly at times when the general markets are apt to be over-stocked.

FOREIGN SHIPMENTS. California peach growers are seventeen days from the London markets. Fruit must be picked green to reach London before it spoils. In eight days fruit can be taken from our mountain orchards and placed on sale in the English markets. Miller Brothers made a trial of this in the fall of 1901. Five carriers of Bilyen peaches which had been exposed to two severe frosts were expressed to New York October 15th. With them were sent three carriers of Keiffer Pears

in good condition. These were shipped in cold storage on the steamer St. Louis which sailed the next day. On October 23rd the fruit was sold in London with the following results:

3 carriers peaches sold for	-	-	-	-	£3.9.0
2 carriers peaches sold for	-	-	-	-	2.4.0
3 carriers pears sold for	-	-	-	-	1.4.0
<hr/>					
Total sales	-	-	-	-	£6.17.0—\$33.22
Freight and storage	-	-	-	-	£1.10.0
Cartage	-	-	-	-	2.8
Cable	-	-	-	-	7.0
Commission	-	-	-	-	6.10
<hr/>					
					£ 2.6.6—\$11.27
<hr/>					
Express to New York	-	-	-	-	\$ 2.80
Total expense	-	-	-	-	14.07
Net proceeds	-	-	-	-	19.15

On the same day in New York City much better peaches were quoted at one dollar per carrier, and Keifer pears at \$2.25 per barrel or an equivalent of about fifty-six cents per carrier. So the whole shipment would have sold in New York that day for not more than \$6.75, from which amount charges for express, commission, and cartage would have to be deducted. The success of the London sales, under such unfavorable conditions, is indeed very encouraging, and will doubtless lead to extensive foreign shipments of our own fresh mountain fruits.

RAILWAY FRUIT REPORTS.

A statement showing the amount of peaches handled in 1901 by one division of the Baltimore & Ohio Railroad, through the eastern panhandle of West Virginia, has been given to us by the division freight agent, Mr. Jas. R. Bell. As this includes the freight shipments from the most intensive peach-growing



FIG. 19. WAITING FOR ICED CARS.

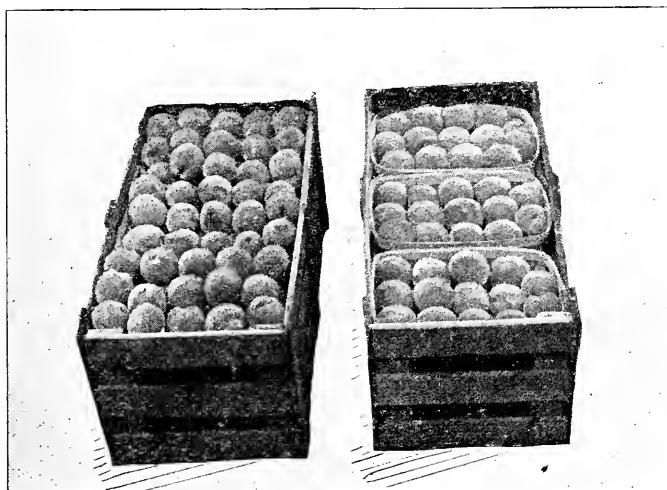


Fig. 20. Two Six-basket "Carriers," Holding Three Pecks Each, of First Grade Fruit.

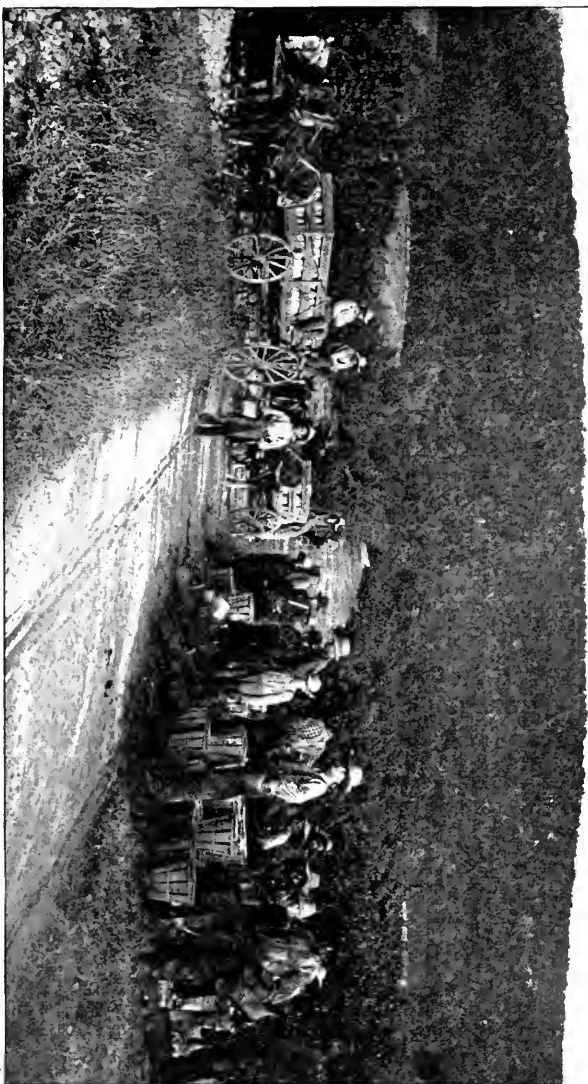


FIG. 21. STARTING FOR THE RAILROAD STATION.

region of the mountains, the following figures are here reproduced:

PEACH SHIPMENTS 1901, B. & O. R. R., EASTERN PANHANDLE.

SHIPPING STATION.	NO. CRATES.	NO. BASKETS.	WEIGHT IN LBS.	REVENUE TO RY.
Keyser.....		679	29,220	\$ 108.38
Green Spring.....	6		300	.25
Springfield.....	348	36	18,480	27.15
Wash. Station.....	54	1,014	29,050	40.00
Romney.....	24	25,376	824,990	2,906.05
French's Station.....	2,301	472	124,660	214.70
Okonoko.....		84	2,560	2.34
Little Cacapon.....		47,375	1,467,410	5,701.03
Paw Paw.....	27?	18,295	451,560	2,070.50
Magnolia.....		5	265	.62
Great Cacapon.....	25		1,410	3.76
Sir John's Run.....	40	1	2,030	4.31
Hancock.....	32	5	1,750	4.03
Berkeley Springs.....	2		100	.25
Sleepy Creek.....	256	70	12,340	46.84
Cherry Run.....	6		300	.44
North Mountain.....	6,191	9,188	624,330	2,385.24
Martinsburg.....		1,849	56,420	245.12
Summit Point.....	10		500	.50
Halltown.....	11		2,530	10.81
Total for region....	9,333	104,449	3,650,305	\$ 13,772.32

Station agents often fail to report the kind of a package but give the weight and revenue quite accurately. The total tonnage of peaches for the region is 3,650,305 pounds, equal to $182\frac{1}{2}$ full car loads of 20,000 pounds each. That same line handled 3,994 packages of plums, 43,040 pounds. A large part of the above tonnage was carried in full car load lots, as very few peaches are shipped by freight in any other manner. The fruit carried by express companies is not included in the table.

Mr. A. L. Langdon gives the following weights of peaches carried by the Cumberland Valley railroad in 1901. These stations all lie in Berkeley county, the extreme points being about 23 miles apart.

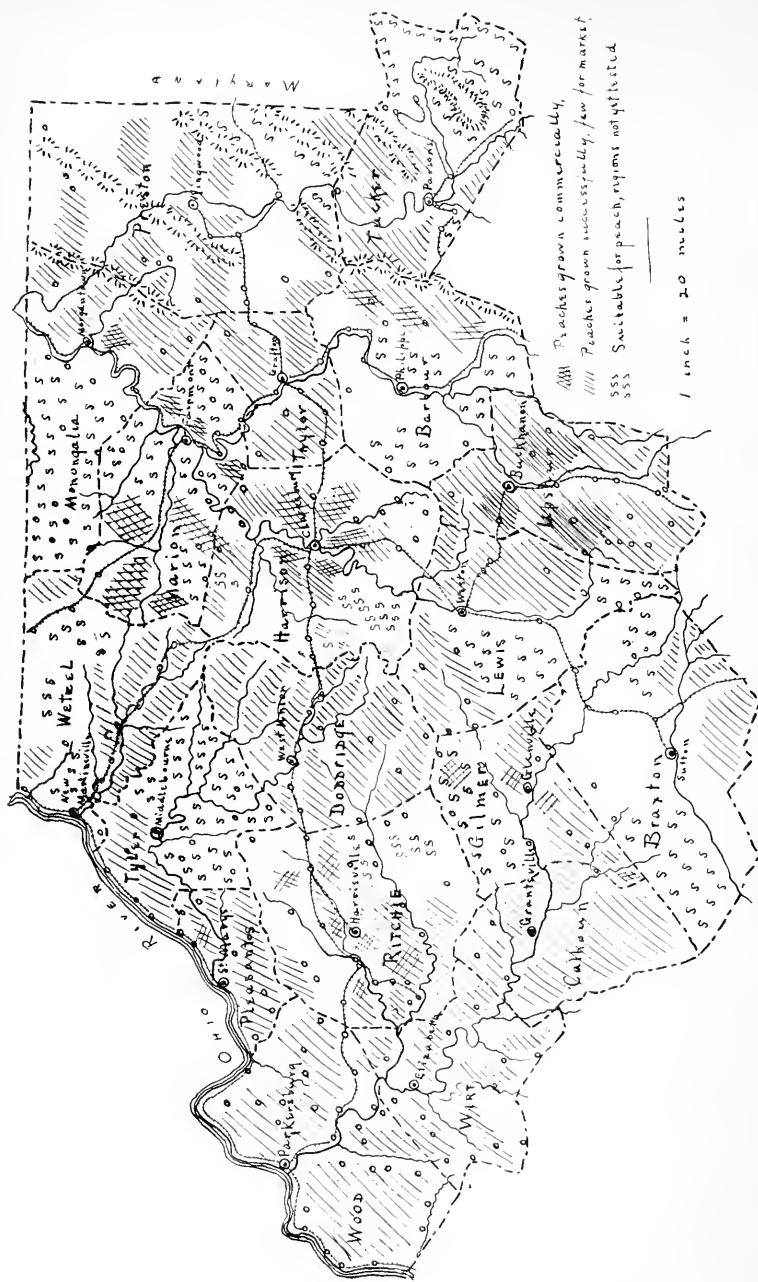
Falling Waters 9,470; Inwood 1,175,395; Martinsburg 20,000; Bunker Hill 3,500; Tabler's 847,395; Ridgway 40,000.

This gives a total of 2,095,760 pounds or an equivalent of nearly 105 carloads. No express shipments are included.

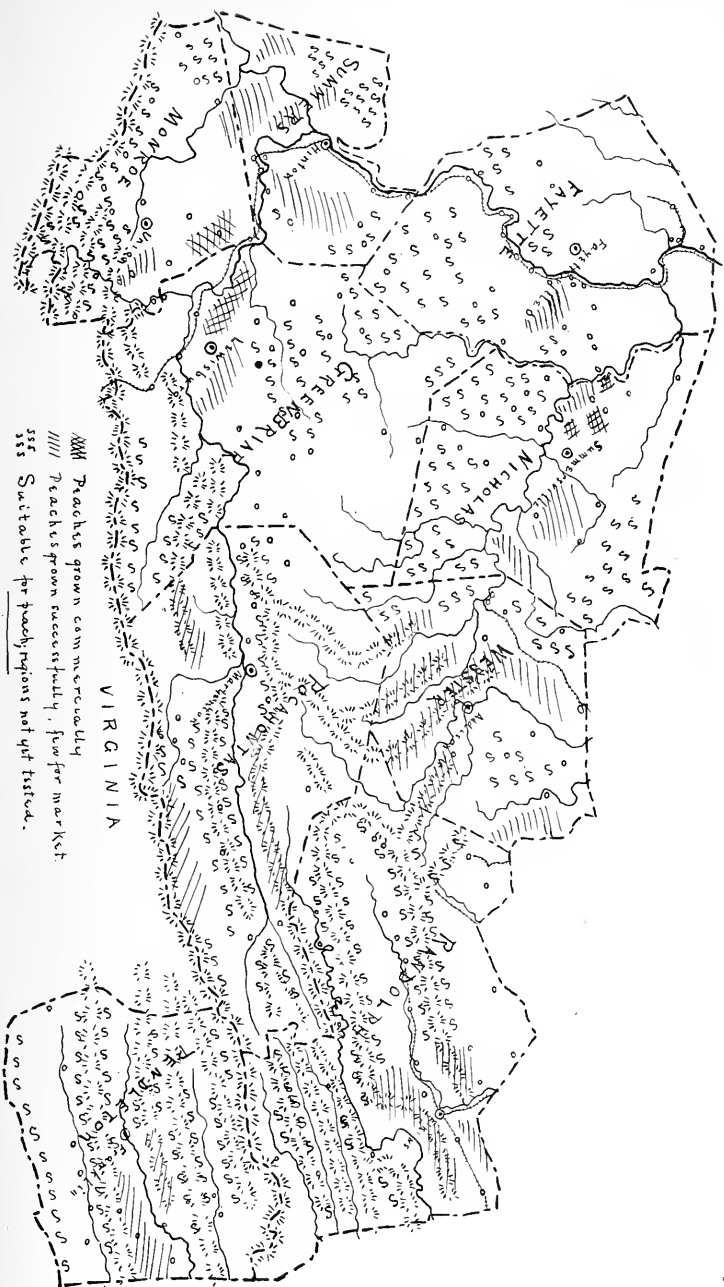
PEACH MAP OF WEST VIRGINIA.

The peach map, given in five sections on four pages of this bulletin, is intended to serve as a general guide to prospective planters who may not be already familiar with the possibilities of the various sections. Three things are indicated on the map: The regions where peaches are grown on a commercial scale are shown by cross lining; regions where peaches have been grown successfully, but chiefly for home use are shaded by parallel lines; areas which are recommended for the trial of peaches are marked with the letter S.

Reports have been received from five or more correspondents in most of the counties. These reports have been very helpful in preparing the map and in writing the paragraphs in regard to peach growing in the different counties.



NORTH-CENTRAL SECTION OF WEST VIRGINIA.

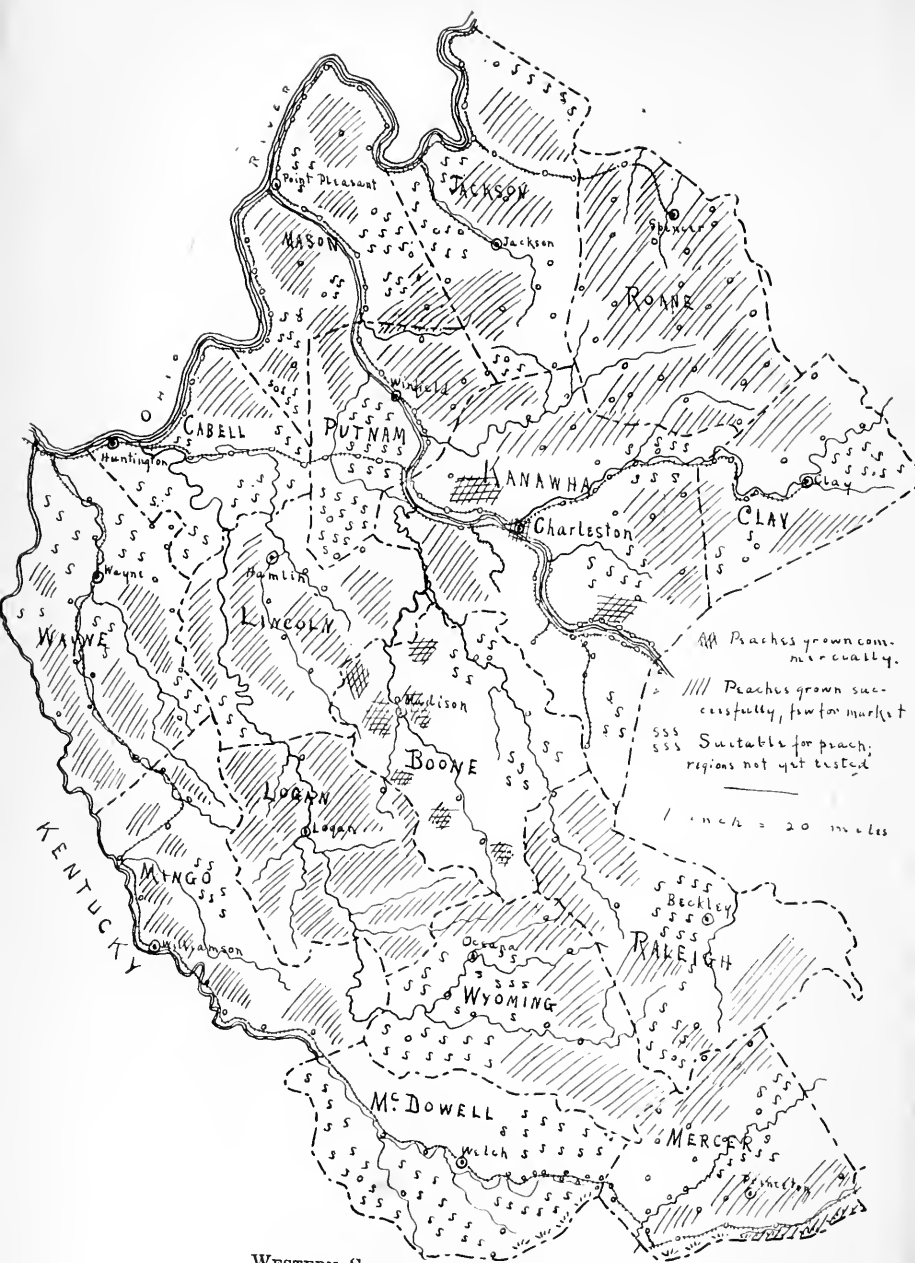


Peaches grown commercially

Peaches grown successfully, few for market.

Suitable for peach regions not yet tested.

1 inch = 20 miles



WESTERN SECTION OF WEST VIRGINIA.

BARBOUR COUNTY.

Very few commercial orchards are found in this county. On a small scale some peaches are raised for market on the west slope of Laurel Mountain. However many other growers are raising peaches for home use, and all sections of the county have been pretty thoroughly tested either with seedling peaches, or standard varieties. With more care on the part of orchardists, the several sections of the county may be developed, and the peach industry should become extensive. Perhaps the largest peach section of the county lies along the western slope of Laurel Mountain on the east side of Valley river: extending on an average of five miles westward from the county line. Here the soil is sandy and gravelly. The hill region of Overfield and Peel Tree has been the most thoroughly tested and found very successful. Here the limestone soil prevails.

The regions marked S. S. on the map have been tested only with seedlings and have been found to be very well suited to peach raising on the hill tops at 1700 to 1800 feet above sea level. The soil at these elevations is better, and the danger of frost is largely avoided. The low lands of the Valley river are not suitable.

BERKELEY COUNTY.

This county contains some very large peach orchards. The largest now in bearing are those lying some miles westward from North Mountain station, near the north end of Sleepy Creek mountains. Woods & Norris are the most extensive growers in this section with 44,000 trees. Other land perhaps as well suited, is farther southward along the same mountain slope, but is at present too far from railroad or suitable market. The regions marked on the map on both sides of Little North Mountain are extensively used. That on the west side being light and sandy in some places, but mostly red shale, with yellow shale subsoil. It is rather mountainous in character and the wagon roads at present not well suited for hauling.

On the east side of North Mountain, known as Apple Pie ridge peaches are grown chiefly as "fillers" in apple orchards.

The county as a whole produces thousands of bushels of peaches annually. It claims, as its chief advantage over other counties, its excellent means of transportation to the large markets of the East. The Cumberland Valley railroad runs parallel with Apple Pie ridge, the B. & O. railroad approximately at right angles with this. Express reaches Washington in two hours, Baltimore in three, Philadelphia in five, New York and Pittsburg in eight. The trees here are remarkably free from yellows and leaf curl, as compared with the Atlantic coast lands.

BOONE COUNTY.

Peaches are grown in nearly all parts of Boone county, but on a very small scale. Only a few orchards are found which produce enough to sell to local markets. The best orchards are found on the high lands of the county. The river bottoms are not adapted to successful peach growing.

BRAXTON COUNTY.

The reporters agree that the south-eastern portion of the county is best suited to the peach. The lighter soils, found in several other parts of the county, as shown by the map, produce strong growing trees, and fine fruit. The two main difficulties in the past, have been winter killing on low lands, and the work of the peach borers. The latter can of course be avoided by vigilance on the part of the owner. Careful selection of sandy and other light soils, and a firm determination to fight the pests will make the peach a very successful crop, especially in the south and south-eastern portions of the county.

BROOKE COUNTY.

This county is well adapted to peach growing. The soil and climate are both favorable. Growers find it necessary to avoid the lowlands along the Ohio river. East and south of Wells-

burg is found a rather rich, black loam, while the northern half of the county is chiefly a light, sandy soil. Peaches bear well in both sections.

CABELL COUNTY.

Peaches are grown most successfully in the northern part of Cabell county. In the southern portions, south of Guyandotte river, there is light, sandy soil, where fine fruit is produced. There are, however, few orchardists in that section. Budded trees are being introduced into the county to some extent, and there is good prospect that peaches will be grown on a large commercial scale very soon. As in many other counties of the state, peaches are most successful on high lands. The station agent at Culloden reports 2,450 pounds of peaches shipped from that station in 1901. One hundred pounds were shipped from Guyandotte.

CALHOUN COUNTY.

All reports agree that peaches do very well on all high lands of this county. The red soils seem preferable. Peach borers have proved to be a great drawback here. Vigilance on the part of owners will soon remove this difficulty. While the map shows all regions suited to the peach, the soil here mentioned, and the higher lands are best.

CLAY COUNTY.

With proper care and cultivation the peach does well in many parts of this county. The regions shown in the map have favorable soil, and could easily be made to produce the fruit on a commercial scale. In a new region of this kind, especial emphasis should be laid upon proper selection of light soil, and high elevations with air drainage to avoid frosts.

DODDRIDGE COUNTY.

Very little, if any, soil in this county will not produce peach trees. Seedling peaches are grown in nearly all parts for home use; but budded stock is being introduced of late years

and the prospect for regular crops is much brighter than in the past. The peach borer has been a great enemy, and when control of this pest is thoroughly understood, trees will thrive to twelve or fifteen years from planting. Trees have suffered winter and spring killing of the buds. This has been worst upon south and south-east slopes. Orchards planted upon north and northeasterly exposures of the high lands have withstood the most severe seasons.

FAYETTE COUNTY.

Little attention has been given to peach culture in this county. A few good orchards are reported about five miles north-east of Fayetteville. The sandy soils at high elevation, in all the regions south and east from Ansted, should grow fine peaches. The railroad facilities south from Ansted to the county line, are above the average.

GILMER COUNTY.

The reports received indicate that the portion of the county lying south of the Little Kanawha river, is best suited to the peach. The extreme southern point of the county is considered the best. It is within hauling distance of railroad on the south. In fact peaches do well in many orchards where they have been tried if protected from the borers and well cultivated. In the northern section peach growing will not be extensive until better means of transportation are provided. For home use and local markets the north-east exposures, and well elevated lands should be used.

GRANT COUNTY.

The portion of the county west of the Allegheny Front has not been tried to any extent. The eastern and northern mountain slopes are planted and found to be well suited to peach growing. A few orchardists are now selling fruit from budded stock, in local markets. The limestone and red shale soils are much better than the slate land found between the mountains. Where the slate lands are used by peach growers,

the life of the tree is much shortened and very thorough cultivation is necessary. The chief drawback to extensive peach culture in the eastern part of the county, is lack of good market facilities. However, a number of new orchards are being planted and fruit will find an outlet to the already improving local markets.

GREENBRIER COUNTY.

As is often the case in regions where little care is taken of the trees, the orchard is short lived, and the grower is soon discouraged. With improved methods of culture and proper care of the trees and fruit, the southern half of the county can easily be developed with the present railroad facilities. With direct express communication with the great eastern markets commercial orchards would here be very successful. Considerable fruit is now being shipped from Alderson. The sandy and red shale lands are abundant in that part, and may be obtained at a very reasonable figure. The northern and north-eastern parts of the county while well suited to peach growing, are not, as yet, provided with suitable transportation. About the head waters of the streams, and similar altitudes, the northern and north-eastern exposures should be selected.

HAMPSHIRE COUNTY.

This county contains three large commercial orchards, and may be considered the center of the great Allegheny peach belt. More than 140,000 trees are now in bearing in these three orchards. One of these is located at the Levels only a few miles from Okonoko station on the main line of the B. & O. railroad, and is owned by L. P. Miller and Bros. The other two mentioned are owned by the Allegheny Orchard Co. One is located at Spring Gap 20 miles north-east of Romney, from which the fruit is marketed at Little Cacapon, only a few miles distant. The other is on Jersey Mountain, and has Romney for its shipping point, three miles distant. The im-

mense profit of the industry is shown by the fact that the same company is rapidly extending its plantations. Near the border line between Hampshire and Morgan counties is located what is probably the largest single peach orchard in America. From this young orchard and at Spring Gap, the Allegheny Orchard Co. shipped 125 carloads of fruit in 1901. Near the orchard just mentioned is an extensive plantation owned by S. D. Moser, who ships his fruit at Paw Paw, and is just beginning shipments in carload lots. The county contains a number of smaller commercial peach orchards, of from 5 to 50 acres in area. Important plantations are being made by R. M. Washington, M. G. and B. L. Harmison, and perhaps a dozen others, chiefly on Middle Ridge, or Patterson Creek mountains, near the Mineral county line. Fruit from here is sent by the Romney and Spring Gap branch of the B. & O. East of this ridge, after crossing the Mill creek valley, we reach what is known as Taylor or Mill creek mountain. The waters of the South Branch of the Potomac wash its eastern base. This mountain is limestone, and has long been noted for its fine flavored seedling peaches, and for the long life of the trees. Here are found several orchards of from 5 to 25 acres, from which the fruit is hauled 15 miles or so, to reach a shipping point. Around Augusta are several good sized orchards, now beginning to bear. The south-eastern portion of the county is well adapted to the raising of fine fruit. The mountains separating the two Virginias, are unsurpassed for fruit growing, having a deep sandy soil. But as the nearest market, Winchester, is twelve miles away, it will not at present be used for such perishable fruit as peaches. As is shown by the map, the whole country is favored with suitable peach soil. In fact the red Devonian shales are found to surpass all other soils for this purpose, as they give a finer color, and better flavor. One region not specially adapted to the peach should be mentioned. It lies near the center of the county. Here the slate soils are said to predominate. On these soils the

peach is short lived, and requires more thorough cultivation. The narrow valleys of the county are to be avoided, as they are subject to late spring frosts. See also notes on Morgan county.

HANCOCK COUNTY.

This county as a whole is well suited to the peach, the soil being chiefly of limestone and shale origin. The border near the Ohio river is usually avoided by growers on account of the fogs which are apt to cause mildew coloration on fruit. On the "second bottom" back from the Ohio river late spring frosts occasionally injure the crop. The hill lands have been thoroughly tried and are well suited in every respect. The markets of Steubenville, East Liverpool, and New Cumberland are easily reached, either by team, boat, or one of two lines of accessible railway. The industry in this county is therefore profitable. In years of the heaviest crops the markets of Pittsburg are quickly accessible. J. B. Newell & Sons, near East Liverpool, with over 6,000 trees, are the most extensive peach orchardists in the county. In the same district nearly every farmer has from 100 to 500 trees, and is able to market a good part of his crop. In Poe district Frank Evans has an orchard of from 2,000 to 3,000 trees. G. Minesinger, David Mayhew, J. H. Mayhew, S. Smith, A. Tochtermann, and S. Webb have commercial orchards. Many others in the county have 100 trees or more. With this fine showing it must be remembered that the peach is a secondary orchard crop, as the apple industry takes the greatest attention of the orchardists in this county.

HARDY COUNTY.

The fact that Hardy county has no railroad is the only thing which prevents it from being one of the finest commercial peach regions in the state. The territory marked on the map produces peaches of superior quality, large size, and attractive color. In the red shale, flint, and limestone soils trees are

vigorous and bear the third season. They are remarkably free from disease. All of the mountain land in Hardy county, where not too rocky and rough, is well adapted to general fruit growing. Peaches do not do well on the bottom lands. As facilities for transportation are improved, the large areas, so well suited to the peach, and winter apple, will yield larger revenues than any other crops.

HARRISON COUNTY.

A number of commercial orchards are reported from Harrison county. Most of these are of a thousand trees or less. The severe freeze of the spring of 1898 has taught the orchardists to select the warm, sandy soils, the high altitudes, and the northern exposures. The rich low lands should be avoided. Trees are now being abundantly planted and the encouragement given by excellent local markets, as well as good railroad facilities will bring the peach industry rapidly to the front.

JACKSON COUNTY.

There are but few large peach orchards in Jackson county. But the industry is increasing. Many are now growing budded stock, and are beginning modern methods of cultivation. A very fine quality of fruit is marketed each year. Much of the soil of the highlands, is light and sandy, and peaches do well. In the south-eastern portion of the county peach growing is becoming a paying industry. Hundreds of bushels of a very superior quality were marketed from that section in 1901. In the other two shaded areas shown on the map the farmers are now awake to the fact that peach growing, especially of the improved varieties, is a success, and very profitable. The Mill creek region and other low valleys, are endangered by the late spring frosts. The county is well provided with railroad facilities.

JEFFERSON COUNTY.

All parts of the county are within easy reach of the eastern markets, being provided with fine railroad facilities. The B.

& O. has two lines and the Norfolk & Western one. The Harper shale lands of the eastern border of the county, and the Martinsburg shale, running from Opequan creek in the direction shown by SS on the map, are naturally best suited for this fruit. Peaches are very generally grown over the county, chiefly as "fillers" in apple orchards. The great profit from apple orchards, and from agricultural crops, has detracted somewhat from peach planting.

KANAWHA COUNTY.

Kanawha county is well provided with transportation facilities, having three lines of railroad, and also good river service. The capital city of Charleston, together with a large population of miners, furnishes ample markets for large quantities of this choice fruit. As shown by the map there are three extensive areas where the peach has been grown successfully. Improved varieties should be more extensively introduced. Thorough cultivation and spraying will make the commercial peach raising very profitable in this county. Suitable soils are found in regions indicated on the map, which have not been thoroughly tested.

LEWIS COUNTY.

Splendid crops of peaches have been produced in all parts of the county, the past two seasons, 1900 and 1901, and with the introduction of the improved varieties, the industry bids fair to be very profitable here. Superior local markets are being built up, and the trial stage is past. We have a list of over thirty growers in this county who have carried on experiments, and demonstrated the advisability of growing peaches on a commercial scale. All parts of the county are nearly equally well adapted, so far as soil is concerned. The uplands should of course be chosen.

LINCOLN COUNTY.

The county has been pretty thoroughly tested in all parts for the growing of peaches, and the fruit is very successful on

the divide between Guyandotte and Mud rivers, south of Hamlin. Especially on what is known as McComas ridge. Also on the ridge dividing Lincoln and Wayne counties. They also do well on the high lands east of Mud river. Peaches have not failed on any of the high lands of the county. The county is almost precluded at present from very extensive commercial peach growing by the fact that there are no railroads within easy hauling distance of the suitable regions. Good fruits can be grown for home use and the local markets and budded varieties are coming more generally into use.

LOGAN COUNTY.

This county like Lincoln has no suitable means of transportation by which fruit can be carried to distant markets. In the elevations along the line between Logan and Mingo counties, many suitable spots can, however, be found for the commercial peach industry, as the hauling distance to the N. & W. railroad is none too great. Peaches for the local markets and home use can be raised throughout the county, at elevations of 1700 feet or more. The soil is rich and peach trees are thrifty, and come into bearing the third season.

MARION COUNTY.

Marion county is well suited to peach growing, by orchardists who are willing to cultivate and spray according to modern teachings. The local markets are superior to those found in most counties. The mining and oil industries have brought here a large number who are ready buyers of choice fruits. The orchards have not yet been able to supply the local demand. Perhaps the largest orchard in the county is located near Barrocksville and contains 7,000 trees. Wherever tried on the uplands, the peach has been very successful, and there can be no good reason for lack of rapid development in the future. In fact, development has already begun. Many are planting for commercial purposes.

MARSHALL COUNTY.

The best peach belt of Marshall county lies on Fork ridge,

between Middle and Big Grave creeks, and extends from Moundsville to the Pennsylvania line. However, peaches are grown on a small commercial scale from the Glen Easton region to the north-eastern quarter of the county, and also to the south-western part near Woodlands. Suitable soils are found in the regions of Sherrard, and from Cameron to the south-east corner of the county. Some failures have occurred in attempting to raise peaches along the creek bottoms, and also on the second bottom of the Ohio river. The county is abundantly supplied with suitable peach soils, and orchardists who select the highlands, are very successful. One grower reports as follows: "The finest peaches I ever saw were grown right here. I have lived for more than fifty years, right in the center of Marshall county, and would not hesitate to plant a peach orchard anywhere in the county on high lands, where I could procure a liberal supply of wood ashes. It is the orchard fertilizer for our soils."

MASON COUNTY.

The map shows that the larger part of Mason county is adapted to commercial peach growing. Six good reports on the peach growing of the county, agree in substance with the following, quoted from one of the largest growers, Hon. S. W. Moore, of Elwell. "There are enough peach orchards already in bearing to prove the adaptability of the soil. Many of these have given fair returns during the past two years, one hundred dollars net profit per acre, having been realized each season in many cases. A glance at the map shows that Mason county has many miles of river front; both on the Ohio and Great Kanawha rivers. Those who grow fruit know the influence of large bodies of water in regard to frost, to say nothing of the convenience and cheapness of river transportation. Then there is a railroad along each river, so we can have our choice in this matter. Mason county has thousands of acres of shaly or sandy hilltops that are admirably suited for

the profitable growing of peaches. I am sorry to say that many of these lovely sites are being plowed for other crops year after year, and are constantly washing away, and the man who does the plowing gets little or no compensation for all his hard labor. May something be done to hasten the day when Mason's hills are to be covered with such orchards as they are capable of producing!"

M'DOWELL COUNTY.

Peaches are not grown extensively in this county, yet the local market, transportation, and soil all go to show that they can be raised with profit. The soil is chiefly sandy with yellow shales, underlaid with clay on the mountains. The trees grow very well here, but little attention is given to them, and they are soon killed by borers, or die from neglect. Some farmers have planted trees on lowlands, and the experiments have been unsuccessful because of injury from frost. Wherever the peach has been tried on lands with sufficient air drainage, the spring frosts have not proved injurious. There is no serious obstacle in the way of successful commercial peach growing by those who will give it sufficient attention.

MERCER COUNTY.

Peaches have been tried in most parts of the county, and in fact there are many growers having from 25 to 50 trees in their home orchards. Most parts of the county are comparatively new in the fruit business, but there are some very fine small orchards, and many kinds of fruit do well. This is especially true of apples, pears, grapes, and sweet and sour cherries. One reporter says "My predictions are that this will develop into a great fruit growing county in a few years, as thousands of apple, cherry, and peach trees were sold here and planted out last fall (1901), and there are some fine young orchards in this section. Peaches grow well here, in most localities, and I look for planting on a commercial scale in a few years." Much of the soil of the county is rich clay on which the peach

does fairly well and is long lived. The northern slopes of the highlands should be selected to avoid the extreme changes of the weather in winter and spring.

MINERAL COUNTY.

The notes here given are made up chiefly from the report of one of the principal peach growers of Mineral county. "The first man to start a commercial orchard was Rev. Henry Harman, an enterprising German, who saw the market advantages of this section. This was soon after the Civil War. Soon to follow his example were J. S. Arnold and Benjamin Grayson. The better class of seedlings were grown at that time, and did fairly well. Later, when budded stock was first introduced, the industry received a check, for, owing to the lack of knowledge of cultivation and pruning, the trees were short lived and rather unprofitable. Some six years ago the interest in peach culture began to revive, and since that time there have been large orchards planted. The Allegheny Orchard Company, and S. L. Twigg have adjacent orchards aggregating nearly 30,000 trees, on Knobley Mountain, two miles from Keyser.

D. A. Arnold has an orchard of some 3,500 trees, near the same mountain in the direction of Ridgeville. A. A. Rotruck cultivates 1000 trees not far from the latter. Near the edge of the county in the vicinity of Burlington, the largest growers are J. W. Vandiver, F. L. Baker and Nelson Kelley. In addition to these there are hundreds of orchards ranging from 100 to 500 trees. Mineral county is just beginning as a peach district. She has thousands of acres that will produce the finest of peaches. Her owners are awakening to the fact that her local markets are of the best in the world. We are only twelve to twenty-four hours' run to the great eastern markets, over the B. & O. line, and in the near future expect to have another through road. Our lands need little or no fertilizer, and the color and flavor of the fruit are seldom equalled and never excelled. The future of this section is indeed bright, and we believe that there will be a great acreage planted to peach trees within the next five years."

The mountain ranges marked in the map, are capped with a flinty lime-stone technically known as "chert" soil, illustrated in this bulletin. This soil seems to be better adapted to peach growing than any other of the numerous soils in the state. Peaches raised on it in 1901 sold at one dollar a peck, topping the New York markets, throughout their season. The county is well supplied in other sections with the Romney, or Devonian red shale lands, where fine fruit is produced. The western part of the county has considerable slaty soil where the peach is rather short-lived, and suffers during dry weather. Growers should select either the *red shales* or the *chert* soils.

MINGO COUNTY.

This county is rather new in the fruit business. Hill tops are being cleared, and small orchards are being planted on the eastern slopes. Experience thus far shows the peach is a success. The regions marked on the map are those which have been tried successfully. While it is probable that suitable soil may be found in all parts of the county, the map does not show this because sufficient experiments have not been tried. On the slopes of Tug mountain, near Pigeon creek, and on the highlands along Gilbert and Ben creeks, are many suitable orchard sites. The transportation facilities are such that the fruit industry should be developed rapidly.

MONONGALIA COUNTY.

The good local markets and the transportation afforded by the M. & K. and B. & O. railways, make peach growing in this county a profitable industry. The supply, however, does not yet equal the demand, and peaches are shipped in from other sections. The soils lying east of the Monongahela river are largely of sand stone origin and are best suited to peach growing.

On the west side of the river the limestone soil prevails. While this is rather heavy for the peach, and better suited to the apple many have successfully grown the peach on a small scale. The extreme western end of the county finds close mar-

ket points along the main line of the B. & O. People are now planting trees and talking "peach."

MONROE COUNTY.

All the reports from this county agree that there are many small areas suited to peach growing. The largest section where they have been thoroughly tried and found to succeed well, extends from near Sinks Grove northward to the county line, and joins the Alderson section in the Greenbrier map. Mr. C. S. Scott at Sinks Grove, has a very large trial orchard and has found many varieties successful. South-east of Pickaway is a section well suited to the peach. They will also do well in the region between Red Sulpher and Peterstown, where tobacco is now extensively grown. The highest lands of the eastern and south-eastern parts of the county are not suitable, because of the cold and frosty climate. The soil is said to be very barren, and is sometimes called "Huckleberry land." Mr. Scott reports that "the best lands of the county are: first, gravelly; second, black, loamy sand: third, red shale: fourth, yellow shale: fifth, soapstone: sixth, other sand. These soils are abundant in the county. Black gravel is the best for peaches and sweet cherries, as borers are not so bad there; buds do not swell so early in spring; and the fruit comes to a higher state of perfection. The trees grow larger, and do not suffer from drouth." A number are setting orchards in the county, and with the railroad facilities at the north and south, the county should be well developed in the regions mentioned.

MORGAN COUNTY.

Morgan county forms a valuable part of what is known as the Allegheny Peach Belt. Peach growing for commercial purposes in this belt, is new; but where proper attention has been given the industry is very successful, except on creek bottoms, and in a few spots where the dark slate sub-soil is too close to the surface. The peach delights in deep, sandy mountain soil; but does not give good results on lands that do not allow deep

rooting. The white shaly sands have generally given better results than any other, although most of the orchards are on the red shale soils, and are giving fine results.

Mr. G. P. Miller, of the Allegheny Orchard Co., reports as follows: "In most of the large orchards we have all three of these soils, as it is hardly possible to get a large area without all of them. The natural forest land is almost perfect for peaches, and all stone fruits, and produces them in great abundance, and of finest quality. Fruit grown on the virgin soil has superior keeping qualities and stands transportation well. The usual rot produced by excessive rainy weather is seldom present on these mountain lands. The black spot and other fungus diseases of the low lands are not present in the successful orchards of this section, which have an altitude of 1200 or 1500 feet above the sea, and from 300 to 400 feet above the Potomac river. Peaches can be grown "wild" in Morgan and Hampshire counties, as well as anywhere in the world, but they will as surely be wild and woolly peaches. The successful business calls for the greatest care from time of planting until the fruit is landed in the market, and a slight bit of carelessness may defeat the whole year's labor.

The various families of peaches have all done well in this section, excepting the large, yellow varieties of the Crawford type, which seems to do better on gravelly soils of still higher altitudes. The varieties of the Chinese strain, as Elberta, do their best with us. The Smock type of peaches, grows in great abundance and of superior quality. Pickquett late and Salway make another family that comes to a most excellent state of perfection, and is very productive. The Heath cling, flourishes with its healthy whiteness, and delicious flavor, but requires careful growing. The Bilyeu does better here than anywhere else east of the Ohio river, unless it be in the Blue Ridge mountains, where it is reported as doing well. While we are not troubled with rot and the fungi, from wet and murky weather, we have been damaged by long continued dry weather, as in

1897, where the peaches were so small that they would sometimes drop through the cracks of the baskets; but with the return of rains, they became of fine size. One good rain more than doubled the size of peaches and yield per tree.

The peach here, as in all sections, requires very close attention and careful management, and the grower must not withhold his hand if he wishes to be successful."

The largest orchards are owned by Allegheny Orchard Co., Paw Paw; S. D. Moser, Paw, Paw; M. S. Springer, H. M. and Gregory Ruppenthal, east of Berkely Springs; also near Berkely Springs, are E. C. Cassler, Benton Batt, Geo. Lineweaver, and Henry Bohrer, with 1000 or more trees each. A score of others with more than 100 trees each could be named. He also notes on Hampshire county.

NICHOLAS COUNTY.

The transportation facilities for shipping fruit from this county are as yet not good. And there is little local demand except for home use. Budded stock has not been introduced to any extent; but seedling peaches are grown in most of the settled areas. The soils are very rich and well suited to the industry. One reporter says, "Any place above 2,000 feet, on our high ridges, with a northern exposure will grow fine peaches. Our soil has a mixture of sand. Northward from the Gauley river the ridges are much richer. The borers are our great drawback." Another says peaches would do well in most parts of the county, if planted on mountains—the higher the better. "My orchard was planted twenty-two years ago on high mountain land, facing the north, in black loamy soil, and is still bearing fine crops of peaches."

OHIO COUNTY.

Much of the soil of Ohio county is of limestone origin, and is not especially suited to the peach. In the eastern half of the

county are regions well adapted by nature to the growing of peaches and cherries, lying as it does at an elevation of 1100 feet or more above sea level it is composed of well-drained, sandy soil. The western part of the county is mostly too low, or has too heavy soil. One reporter says "what is needed here is information concerning care of trees."

PENDELTON COUNTY.

This county includes the southern extension of the same ranges of mountains which are so much used for raising peaches in Hampshire and Mineral counties. The soils are well adapted to this fruit, being composed very largely of the light and red shales, with a good mixture of sand. Seedling peaches have been tried in most parts of the county, and thrive well on high lands, till overcome by borers. Little attention is given to peach raising from the fact that there are no railroad facilities and no home markets. Few, if any of the improved varieties have been sufficiently tried in the county. One reporter says "People are now buying and planting more peach trees every year. The valleys are being avoided."

The county will be part of the great peach belt when transportation is provided.

PLEASANT COUNTY.

This county, though small, provides many areas suited to peach growing. They do best in Pleasants county on the second row of hills back from the river, and are quite generally planted over all the rest of the county southward. There are several orchards of more than a thousand trees each. Reporters agree that most of the uplands in the county are too broken to be especially adapted to peach culture, as an orchard must be cultivated to get the best results. When the use of orchard cover-crops has been learned, much of the upland now useless can be planted in orchards.

A new seedling variety of peach known as "Racer" is extensively planted in the county. It is said to be valuable for canning. Size large, flesh white, oblong in form, fine grain, small

pit, comes true from seed. It was discovered in Washington county across the Ohio river. It ripens after Stump the World.

Other varieties doing well, in the county are Elberta, Crawford, and Bilyeu. The local market of the county seem to pay best at present.

POCAHONTAS COUNTY.

At present peaches are raised chiefly for home use, yet many areas of the county are well suited in soil and climate to both peaches and apples. The regions shaded on the map have been found successful in the raising of seedlings. The railway facilities now afforded by the C. & O. should cause this region to be used extensively for the distant markets. One reporter says fruit growing in the county is improving.

PRESTON COUNTY.

Most farmers in the parts of the county where the map is shaded, raise a few peaches for home use. There are no extensive commercial peach orchards in the county. But there are large areas well adapted to fruit culture. The extension of the M. & K. railroad is giving better transportation facilities, and new regions have recently proved to be suitable to this industry. We may therefore confidently expect that large plantations will be made.

Another encouragement is found in the local markets which are constantly improving, as the coal industries are developed.

PUTNAM COUNTY.

Peaches have produced best when planted on the high sandy ridges about the headwaters of the small streams which are tributaries to the Kanawha river. They have borne here regularly for many years. Orchards should be planted on lands recently cleared of brush. Neither peaches nor cherries are very extensively grown by anyone, but they are successfully grown by a number of farmers, on these lands, in a small way. One reporter says, "If the farmers of Putnam county would give more attention to the growing and culture of peaches, they

could increase their bank deposits, and do so much easier than by general farming. Some of the most energetic men have already found this to be the case, and now extensive plantations are being made. Most all the upland of the county is fairly well adapted to peach growing." From Hurricane on the C. & O. railroad 900 packages of peaches were shipped chiefly by express in 1901. These weighed 21,603 pounds or more than a carload.

RALEIGH COUNTY

This county is fairly well adapted to peach growing, as the portions which have been tried and are shaded in the map, produce good fruit. This is especially true of the north-western, the south-western, and south-eastern sections. The center of the county has not yet been tested very extensively. Of course in speaking of these areas it is understood that the higher altitudes are meant. With the development of the coal regions in the eastern and western extremities of the county, and the consequent demand for good horticultural products, a local market for a considerable quantity of fruit is assured. Two railroads are sending spurs into the county, which means an increased development in fruit growing, as well as in other lines. Growers should begin with the best varieties.

RANDOLPH COUNTY.

The agents of the W. Va. C. Railroad, in Randolph county, report that fruit is shipped into the county to supply the local demand. The development of the timber and coal industries of the county is making better local markets for fruits. When the farmers and fruit men have succeeded in producing more than the local market demands, the transportation facilities to outside markets are ready and waiting. The county is capable of producing a large quantity of superior fruit. The brush lands of the mountain slopes should be cleared and planted with budded peach stock. At present there are no commercial orchards. Many have planted on a small scale for home use, and find the fruit of superior quality. Peach trees mature their

wood well and endure the winters wherever the elevation is great enough. At 200 feet or more above the river and creek bottoms, peaches can be grown successfully. East and north slopes, and tops of all the mountains, and all the higher hills, are especially adapted. The areas shaded in the map are reported as the best, or most extensively tried.

RITCHIE COUNTY.

The areas shaded in the map are marked by Mr. R. R. Harris as being reasonably sure to produce a crop year after year. The fruit raised here is of the best quality, and will compare favorably in the market with that of any section. The areas contain some small orchards which are paying well. There are other large areas in the county where fruit can be raised with equal success, if attention is given to it.

The transportation facilities afforded by the railways of the county, and the proximity to the local markets of the oil regions, combine to encourage the orchardist to produce fine fruit on a commercial scale.

ROANE COUNTY.

Peaches do well in any part of Roane county, on the high lands, where sufficient air drainage is afforded to avoid the late spring frosts. Orchards located on the northern slopes are more immune from spring freezes because the buds do not swell too early. One reporter says "The south-east quarter of the county has sandy soil, and the remainder mostly clay; still peaches do well as long as the trees live."

SUMMERS COUNTY.

A county which produces such a large quantity of apples as this one, and which has so much suitable peach soil as is shown on the map, will sooner or later become an extensive peach producing county. One reporter says there is only one man in the county who makes peach growing a success, due to the fact that he gives the business proper attention. A great deal of the soil of this county is as well suited to the peach as any in the south-

earn half of the state. There are perhaps not over half a dozen farmers who have more than fifty bearing trees. There are, of course, many small orchards where good fruit is produced for family use. On the hill tops near the C. & O. railroad, brush land could be cleared and made to pay a handsome profit, by growing improved varieties on a large scale.

TAYLOR COUNTY.

Taylor county lies in the same region as Barbour, and like that county can produce very fine fruit. The local market are superior, and transportation facilities are such as to allow producers to find outside markets easily. Little attention is given to peach growing, however, and the local demand is not nearly supplied.

It is important in this county to select good orchard sites. The tops of hills and north-eastern slopes are recommended. There seems to be a fine opportunity here for men wanting to make peach growing for local markets a paying business.

TUCKER COUNTY.

There are a few commercial peach orchards in this county. Perhaps one of the best is located near Red Creek. The fruit is of a superior quality, but there is not enough produced in the county to supply the local markets. Peaches are shipped in each season. As shown on the map, the regions back from the streams have been successfully tried. The general altitude of the county is very high, and spring frosts are very bad. It is therefore important to make a careful selection of the orchard site.

TYLER COUNTY.

We find peaches growing along the Ohio valley and river hills, in abundance, for two miles or more back from the river. There we find a strip of country running at right angles to this, along the waters of Middle Island, not adapted to peach raising, because of the danger from frosts. The soils on the hills back from the creek is mostly red clay and limestone, fairly well suited to the peach.

The climate is well suited to commercial peach growing, but not many orchards are found through these localities. The hill tops back from the Ohio river have been used chiefly because of their proximity to the river railroad, and because the trees at the higher altitudes are more regular bearers. The fruit here is of better color. The southern point of the county, and the range of hills along the border next to Wetzel county, are within easy hauling distance of railroads, and should be developed commercially.

UPSHUR COUNTY.

Upshur county abounds in hills, and on nearly every hilltop peaches can be grown with success. Light soils are found in nearly every part of the county. Peaches have been grown in nearly every part of the county, and the map is therefore shaded over its entire surface, the more intense shading showing the location of some of the best orchards, though other localities are as well suited. The southern parts of the county around Kanawha Head and Canaan are especially recommended to peach planters. Most of the trials of the different sections has been with seedlings, but there are also many home orchards containing some budded stock.

F. E. Brooks at French Creek has the largest collection of improved varieties in the central part of the state and his notes on the success of certain varieties will be very helpful to future planters in that section. The county contains a number of progressive orchardists who are giving much attention to their fruit, and already the future prospect is very bright.

WAYNE COUNTY.

There are many high hills in the county, but much nice farming land is found at their summits. Peaches should do well here. The trees that have already been planted bear nearly every year. As is often the case in the colder climates the bearing life of the peach tree is limited to five or six years. The creeks which extend north and south furnish good air drainage which helps to avoid spring frosts.

Wm. Meade has an extensive trial orchard of many varieties of fruit, near Stonecoal, in the southern point of the county. He reports that for a number of years peaches have yielded an annual crop, and that German Prunes and Apricots can be successfully and profitably grown on the mountain tops. More attention should be given to peach culture, and the evil effects of borers and diseases should be combatted.

WEBSTER COUNTY.

This county is barely past the trial stage of peach growing. Small orchards have been tried in most of the settled districts. Perhaps the largest orchard in the county contains 200 trees, and is on the hills along Elk river, near Addison. It bears very well. Trouble from winter killing has discouraged many farmers, while others have selected northern exposures and the spots protected from winds, at elevations of 200 or more feet above the surrounding country. Such are exempt from spring frosts, because of trees being held dormant until danger is past. The local demand for fruit is increasing and the county is abundantly able to meet the needs. The orchards should be given more attention. The railroads in the western part of the county make that region preferred by planters.

WETZEL COUNTY.

Peaches are grown mostly for home use. Few if any are shipped out of the county. Many farmers have 100 trees or less, and the county has been pretty thoroughly and successfully tested in all uplands. The eastern and western parts of the county, and the region along the southern border, have the best markets, because of their proximity to railroads. The local markets are not sufficiently supplied with good fruit. Growers are beginning to pay more attention to improved varieties, and we may expect that local conditions will improve.

WIRT COUNTY.

Wirt county, though not yet well developed because of lack of through railroads, is nevertheless well provided with suitable areas for the production of good peaches. Considera-

ble soil is found on which the peach thrives well. Some of the improved varieties have been planted and we may confidently expect that the industry may be followed to a much greater extent in the near future.

In selecting suitable areas by the map, it should be borne in mind that any low lands found marked should be avoided.

WOOD COUNTY.

The local markets here are unusually good and the means of transportation are of the very best. The soils of the county, while quite variable, are such as to make the peach successful on all the uplands. Growers have learned to avoid the lowlands of the creeks and rivers. The reigon south of the Kanawha has been more extensively used for peaches than the northern part of the county and a number of commercial orchards are found here. The white clay land found in this county is recommended for the peach, as the trees live longer in it, than in the soils of limestone origin. However the fruit is said to be larger and finer on the latter soil. Wherever sandy soils are found at a sufficient elevation, the peach thrives well. Some attention is given to modern methods of culture, and the outlook is encouraging.

WYOMING COUNTY.

For the last few years wherever there were peach trees in Wyoming county, there have been peaches in abundance, even when apples were a failure. Peaches have been tried chiefly in the northern and eastern parts of the county, but the soil and climate indicate the high lands of the entire county could be used with success. There being no railroad in the county, much of it is in an undeveloped condition, and peach growing is not likely to advance more rapidly than the local demand will warrant.

